HFS Technical Report No.4

TOOLS FOR BREAK-EVEN ANALYSIS
AND FINANCIAL CONTROL AT
MIREBALAIS HOSPITAL, HAITI

Submitted to:

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ABSTRACT

To achieve financial self-sufficiency, Mirebalais Hospital, a rural facility in Haiti run by the private voluntary organization (PVO) Eye Care Management and Resources for Community Health (MARCH), has instituted a cost recovery system. However, fees charged do not generate sufficient revenues to cover costs, and collection of fees is not strictly enforced. A break-even analysis shows that if fees for most services (excluding surgery, deliveries, and maternity care) were increased by 25 percent in real terms, the hospital could break even in six years. This assumes fee collection rates are 100 percent, and a 50 percent increase over current rates.

Fee collection and financial administration can be improved by assigning fee collection tasks to specific individuals, separate from patient registration responsibilities; improving reporting forms and the chain of reporting cross-checks; improving patient tracking through a numerical reporting system, instituting accountability for fees collected; and using a one-book accounting system and revised chart of accounts. To improve monitoring and financial control, regular reports on financial status can be utilized.

PREFACE

Health Financing and Sustainability (HFS), a five-year project of the Health Services Division, Office of Health, Bureau of Science and Technology of the Agency for International Development, begun in September 1989, provides technical assistance, conducts applied research, and disseminates information about health financing and organization in developing countries. The project's purpose is to influence policy change, assist in policy implementation, and demonstrate and evaluate the effects of alternative policies and mechanisms for financing health services.

This report is an example of technical assistance conducted by HFS. HFS performs technical assistance assignments to assist developing country governments and private sector organizations to address health financing problems. In the particular case of the present study, at Mirebalais Hospital in Haiti, HFS is working with a private voluntary organization (PVO), Eye Care MARCH (Management and Resources for Community Health), to develop a health financing scheme.

The scheme involves resource generation through cost recovery, one of HFS's five emphasis technical areas. The first component of HFS's work concentrated on helping Mirebalais Hospital to improve pricing within its cost-recovery system. The pricing must allow the hospital to break even financially, while setting prices to cross-subsidize (1) services that it would like to promote, such as immunizations, and (2) service use by people with limited ability to pay. Further, the pricing system must take into account the effects of price levels on utilization of services. Software written in a common spreadsheet program was developed to allow the hospital to simulate the effect of any combination of price levels, cross subsidies, and fee exemptions on financial performance.

The second component of the HFS work assisted the hospital with improving the operation of the patient registration, accounting, and financial control systems that are essential to the smooth functioning of cost recovery mechanisms.

This technical assistance was conducted by HFS in response to a request and with funding from USAID/Port-au-Prince. USAID/Port-au-Prince is assisting PVOs to develop sustainable health financing policies, as the private sector takes on a greater role in providing health services in Haiti.

ACKNOWLEDGEMENTS

ABSTRACT

To achieve financial self-sufficiency, Mirebalais Hospital, a rural hospital in Haiti run by the private voluntary organization Eye Care MARCH (Management and Resources for Community Health), has instituted a cost recovery system. However, fees charged do not generate sufficient revenues to cover costs, and collection of fees is not strictly enforced.

A break-even analysis shows that if fees for most services (excluding surgery, deliveries, and maternity care) were increased by 25 percent in real terms, the hospital could break even in six years. This assumes fee collection rates are 100 percent, and a 50 percent increase over current rates.

Fee collection and financial administration can be improved by assigning fee collection tasks to specific individuals, separate from patient registration responsibilities; improving reporting forms and the chain of reporting cross-checks; improving patient tracking through a numerical reporting system, instituting accountability for fees collected; and using a one-book accounting system and revised chart of accounts. To improve monitoring and financial control, regular reports on financial status can be utilized.

MAP OF HAITI
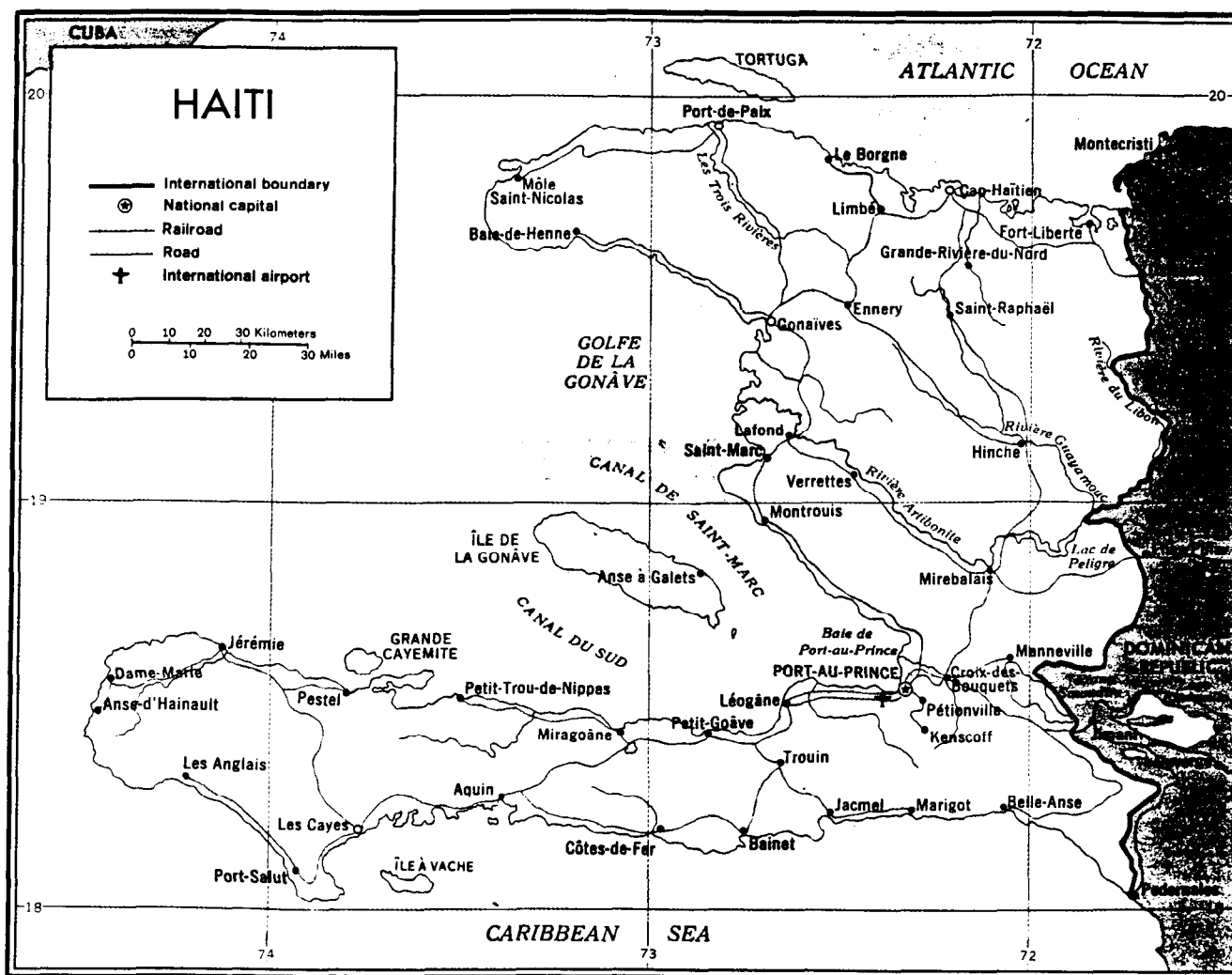
Source: United States Department of State, Background Notes, 1987.

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EXECUTIVE SUMMARY

A cost recovery system is in place at Mirebalais Hospital (MH), a rural hospital in Haiti run by the private voluntary organization Eye Care MARCH (Management and Resources for Community Health), as part of its efforts to achieve financial self-sufficiency. However, a 1989 study found that fees charged did not generate sufficient revenues to cover costs, and that the collection of fees was not strictly enforced.

At the request of USAID/Port-au-Prince and the management of Eye Care/MARCH, Kirsten Frederiksen, a health financing specialist with the Health Financing and Sustainability (HFS) Project, performed an analysis of costs, pricing, break-even, and monitoring of financial systems at MH. HFS consultant Serge Fernandez analyzed hospital accounting and financial control systems. The results of this work, presented in this report, include: a tool for analyzing break-even points, given different scenarios, and for making pricing projections; recommendations for setting prices and using the break-even tool over time; evaluation of accounting and financial control systems; recommendations for improving the accounting and financial reporting/control systems; and a financial monitoring and evaluation plan for the hospital.

The analysis of break-even for MH showed that fees charged for most services were lower than those services' average costs. Only for a few services, including surgery, deliveries, and prescriptions, were prices set close to average costs.

MH currently receives about 30 percent of its operating costs in subsidies from Eye Care MARCH, USAID, the Haitian Ministry of Public Health, and various donations. The remaining costs are covered through user fee revenues and grant income. Given current subsidy levels, MH operated with a small surplus in 1990. In 1991, MH will no longer receive grant income (representing 50 percent of operating revenue). This subsidy reduction will considerably worsen the hospital's financial standing.

Given this situation, a numerical simulation was performed to assess how changes in fees could affect MH's financial position and service utilization. Simulations showed that if fees for most services (excluding surgery, deliveries, and maternity care) were increased by 25 percent in real terms, the hospital could break even in six years. This assumes fee collection rates are 100 percent, and a 50 percent increase over current rates. In years one through five, under this simulation, the hospital would continue to depend on non-patient-generated revenues to finance its deficit. Assuming the quality of services remains constant, a 25 percent fee increase would potentially lead to a decline in service utilization by the catchment population. Other simulations of break-even indicated that even if hospital fees were raised and utilization could be doubled, MH would not break even for three more years. In all, external subsidies will be required by the hospital if it is to remain financially viable and maintain its current service volume.

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The simulation model of MH's performance is a useful planning tool for evaluating the impact of alternative policies or circumstances on the hospital's financial performance and utilization of services. MH managers can use the model developed to study other possible scenarios and explore alternative solutions to the hospital's current financial situation. Pre-payment methods of financing could also be explored further.

With respect to the administrative procedures, several areas within the patient registration, fee collection, and accounting areas need to be improved for cost recovery to be successful at MH. These include: assigning fee collection tasks to specific individuals separate of patient registration responsibilities, improving reporting forms and the chain of reporting cross-checks, improving patient tracking through a numerical reporting system, instituting accountability for fees collected, and using a one-book accounting system and revised chart of accounts. To improve monitoring and financial control, regular reports on financial status can be utilized. Ultimately, financial and cost control will be as important for the success of cost recovery at MH as improved fee collection and higher patient revenues.

LIST OF ACRONYMS

AOPS	Association des Oeuvres Privées de la Santé
ACS	Average Cost of Services
AIDS	Acquired Immune Deficiency Syndrome
CDS	Centers for Development and Health
CHI	Child Health Institute
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HFS	Health Financing and Sustainability
IDB	Inter-American Development Bank
MARCH	Management and Resources for Community Health
MH	Mirebalais Hospital
MSPP	Ministry of Public Health and Population
PAHO	Pan American Health Organization
PVO	Private Voluntary Organization
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
VACS	Voluntary Agencies for Child Survival

1.0 INTRODUCTION

1.1 OVERVIEW AND OBJECTIVES OF THE ANALYSIS

Mirebalais Hospital (MH), a small rural hospital in Haiti run by the private voluntary organization Eye Care MARCH (Management and Resources for Community Health) currently is supported by a combination of donor assistance and user fee revenues. Acknowledging that it is likely that donors will not continue to subsidize curative services -- at least not at the current levels -- the management of MH is facing the task of revising its price schedule so that user fees cover a larger proportion of expenditures than they currently do. However, revision of the price schedule alone will not accomplish the hospital's twin goals of self-sufficiency and maintaining the ability to serve those who cannot pay for health services. Also needed are a means of predicting the effect on utilization of price increases, a mechanism for protecting the poor, and effective fee collection, accounting, and financial monitoring systems that are administratively feasible.

The objective of the analysis presented in this report is to improve the cost recovery system of MH. The purpose of this report is to guide implementation of a revised cost recovery system at MH by providing a tool for calculating break-even points, based on different price structures, demand, and costs; and recommendations for improving financial and administrative control at the hospital. The recommendations in this report will provide one important component to an improved administrative and financial control system being developed for other Eye Care MARCH activities. (See Scope of Work, Appendix A.)

The first section of the report provides background information. In Section 2, methodology for the analysis is described. Section 3 presents technical background and results of the break-even analysis, including utilization, cost and pricing data, as well as the analytic results, and recommendations for revisions in the price schedule. Section 4 is devoted to reviewing the current weaknesses and recommended improvements in administrative practices associated with cost recovery: patient registration and fee collection; accounting; and monitoring and evaluation for financial control. The final section presents concluding remarks. Note that a glossary of terms is presented in Appendix B.

1.2 BACKGROUND

Mirebalais Hospital lies in a rural district in the central highlands of Haiti which covers approximately 400 square kilometers. While only 40 kilometers north of Port-au-Prince, Mirebalais is not easily accessible, and travel within the area is difficult. The district is divided in two by the Artibonite River, the largest river in Haiti, and is inhabited primarily by subsistence farmers. Some areas, however, have coffee and tobacco plantations. The population of the district is over 110,000 people (Child Health Institute, 1990).

Health problems in Mirebalais are typified by high morbidity and mortality due to diarrhea, malnutrition, respiratory infections, and other infectious diseases among children, and tuberculosis and malaria among adults. According to the Institut Haitien de l'Enfance, more than 40 percent of infant deaths occur in the neonatal period and more than 61 percent of deaths of children under five occur before age one (82 percent of deaths of children under five occur between 0 and 24 months of age). The leading cause of death is diarrhea, followed by respiratory infections. It is presumed that tuberculosis constitutes the leading cause of death among adults, although data on adult deaths are not complete for this area. In other rural areas of Haiti, prevalence of tuberculosis is estimated at two percent. In Mirebalais, maternal mortality is five per 1,000 (Augustin, 1989). Pregnancy-related deaths are thus a significant cause of death among women 15-49 years of age. Malaria is endemic to the area, and suspected cases of Acquired Immune Deficiency Syndrome (AIDS) have appeared in recent months.

Before 1989, the Mirebalais district had only minimal health services available, although community outreach activities had been operated in the area since 1985 by Eye Care Haiti, a private voluntary organization (PVO). Curative care was provided by a Ministry of Public Health and Population (MSPP) team at the (then) Mirebalais Health Center.

In early 1989, the MSPP asked Eye Care to coordinate health activities for the Mirebalais area and assume responsibility for the operation of the Mirebalais Health Center. Eye Care MARCH was formed to take on this role in Mirebalais. To address some of the pressing public health problems of the area, the health center was converted into a 20-bed hospital and community outreach services were intensified.

It is Eye Care's philosophy to ask users of its curative services to contribute financially to their care. However, significant financial assistance from various donor agencies, including USAID/Port-au-Prince, the Inter-American Foundation, and World Neighbors, had allowed fees to remain far below costs. In 1989, realizing that donor assistance would not finance operational costs of curative services, Eye Care MARCH requested assistance in determining Mirebalais Hospital's annual operating costs and the extent to which patient contributions could cover them. Fees are not charged for preventive outreach services and it is assumed that donors will continue to subsidize these services.

In mid-1989, a study estimated the costs of services provided by MH, and the cost recovery performance of the facility was evaluated (Frederiksen, 1989). The analysis showed that if prices for curative services approximated average costs, many of the prices might be affordable to the catchment population. For example, prices for outpatient services and drugs would be less than one percent of per capita gross domestic product (GDP). This indicates that financial self-sufficiency is a feasible goal for Mirebalais, provided fee collection rates are high. However, analysis of cost recovery performance showed that prices charged were not in line with costs and that fee collection was not strictly enforced. Eye Care MARCH would like to improve the cost recovery system so that the hospital will break even. Whether hospital revenues will be able to finance a

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portion of community outreach services will depend partly upon the degree to which these systems can be improved and a surplus generated.

Before an improved cost recovery system at MH can be implemented, additional work must be done. First, the pricing structure must be revised. There is a desire to promote the use of some underutilized preventive services, such as immunizations and prenatal care, and decrease the financial burden placed on users of inpatient services. To be able to attain self-sufficiency while pricing such services below cost would require setting prices higher than costs for higher-demand, lower-cost services, such as certain outpatient services and drugs (i.e., creating cross-subsidies). Pricing may also need to consider the costs of the community health program, if the program requires subsidization through hospital revenues in the future.

Second, implementation of an improved cost recovery system requires improving administrative mechanisms. These mechanisms include fee collection and exemptions, financial control, and safeguarding of funds. Also, systems to monitor costs, revenues, and utilization of services must be improved.

Third, once a pricing system is set up and administrative systems improved, the hospital requires a monitoring and evaluation plan so that prices and administrative mechanisms can be adjusted over time. For example, price adjustments may be needed based upon changes in costs or utilization in order to ensure self-sufficiency. Over time, patterns of utilization may not respond to pricing of services as anticipated when original prices were set. Prices must also increase with inflation of costs. The exemption system may not adequately ensure access by the poor or require payment by those who are able to pay.

Finally, accounting and financial control systems developed for MH must be consistent with those being developed for other Eye Care MARCH activities. One of these other activities is City*Med, a new USAID-funded project that was to set up and manage a network of six self-financing diagnostic health facilities in Haiti beginning in late 1990. The recommendations made for MH require coordination with those planned for City*Med, because both will provide the basis for an improved accounting and financial control system to be implemented at Eye Care MARCH. This integrated system will allow Eye Care MARCH to effectively manage and control its growing roster of activities.

2.0 STUDY METHODOLOGY

To recommend improvements in the cost recovery system at Eye Care MARCH's Mirebalais Hospital, several activities were necessary. The following provides the methodology for these activities and is the basis of the analysis given in this report.

To set a schedule of prices for MH, the cost estimations and revenue performance evaluation conducted by Frederiksen in 1989 were brought up to date, adjusting for changes in salaries, drug prices, and other cost items. Variations in prices from costs were proposed, setting prices lower than average costs for services that are to be promoted, with compensating increases in prices for other services. Allowance was made for the expected percentage of exemptions from payment for indigent patients. Projections of revenues were made, along with readjustments in prices, to project break-even status under different scenarios.

To set a schedule of prices under different scenarios, an interactive spreadsheet containing the various components of a break-even analysis was developed. The easy-to-use Lotus 1-2-3® spreadsheet allows an estimation of revenues, based on changeable service prices and utilization rates, and costs, based upon recurrent fixed and variable costs. Break-even status is calculated from estimated revenues and costs. The spreadsheet also contains changeable variables that affect break-even status. Instructions for use of the spreadsheet and the cell formulae are included in Appendix D. Diskettes were provided to Mirebalais Hospital administrators.

Literature on development of pricing strategies for health services was reviewed to identify key variables that may affect the outcome of the break-even status and could be entered into the spreadsheet. Variables entered include per capita income, income elasticity of demand (percentage change in demand per percentage change in income), price elasticity of demand (percentage change in demand per percentage change in price), and population growth rate. Income and price elasticities were not varied by service or price level in this model, but were included to give a general sense of how the break-even point could be affected by these variables. Variables that may affect revenues and costs were also included, such as fee collection and exemption rates, and inflation, subsidies, and drug wastage, respectively. Many iterations of the model, changing key variables under different scenarios, were required to show how prices could be set under different conditions. Prices for break-even and those required to generate a surplus were estimated under these different scenarios.

Given the sets of prices to be applied, the existing systems of fee collection, financial control, and safeguarding of funds were evaluated. Weaknesses within the current systems were identified and recommendations for improvement were made. Methods for systematically identifying who should be exempted from payment were established, building upon current practices. Recommendations for revising the current system also included the design of methods for collecting financial management information on a regular basis. This

information includes the volume of each service performed, exemptions granted, service costs, and revenue received for each service unit in the hospital. Model forms for the collection and summary of this information were recommended.

Finally, a plan for monitoring and evaluating the system on a periodic basis was devised. This plan includes the frequency of financial management reports, frequency and methods for adjustment of prices for changes in input costs, and methods for evaluation and adjustment of the price and exemption structure to maintain self-sufficiency while promoting certain services and ensuring access to the catchment population. A brief training session for the use of the spreadsheet and financial/administrative control system was provided to the key manager of Eye Care MARCH.

Important throughout the analysis was continual dialogue with key administrators, donors, hospital personnel, and other relevant consultants. In this way, up-to-date information was provided with respect to current systems and practices at Eye Care MARCH and MH. In addition, ideas for improvements could be tested for their feasibility before recommendations for implementation were made. To disseminate the findings, a summary presentation of problems addressed, methods used, results and recommendations proposed was given to Eye Care management and to USAID personnel. Several individuals, including USAID personnel, Eye Care administrators, PAHO personnel, and HFS health financing specialists reviewed the draft report.

In summary, this analysis comprised the following components:

- Revision of 1989 cost estimates for MH and Eye Care MARCH community health activities.

- Review of the literature on pricing of and demand for health services in developing countries, along with relevant in-country reports.

- Development of a spreadsheet for iterating pricing of MH services and break-even under different scenarios; recommendation of different pricing schedules based on these scenarios.

- Evaluation of the current systems for fee collection and exemptions, financial control, and safeguarding of funds; identification of weaknesses and recommendations for improving them.

- Development of a plan for monitoring and evaluating the systems over time.

3.0 TECHNICAL BACKGROUND AND RESULTS OF THE BREAK-EVEN ANALYSIS

3.1 INTRODUCTION TO THE RESULTS

This section first presents information on service utilization patterns at MH, estimates of annual costs by service, and prices per service unit. This provides a picture of the level of hospital cost recovery, and serves as the background for the break-even analysis. In the analysis, various assumptions are employed to estimate the effect of different price schedules on the hospital's financial status. Recommendations for further data collection and implementation of revisions in the pricing schedule are provided at the end of the section.

3.2 TECHNICAL BACKGROUND FOR BREAK-EVEN ANALYSIS

3.2.1. Service Utilization

As shown in Exhibit 1 (below), infectious diseases predominate MH's case mix of patients. Based on hospital records, malaria is the leading cause of illness at the hospital, making up more than 58 percent of all cases seen. Diarrheal disease in infants is the second leading cause of illness seen at the hospital, making up almost 25 percent of all cases seen. Other infectious diseases, including acute respiratory infections (pneumonia), typhoid, tuberculosis, and tetanus, are also seen as shown. Suspected cases of AIDS have begun to appear in recent months, although no HIV test is available at the hospital for confirming suspected cases.

EXHIBIT 1: PATIENT CASE MIX
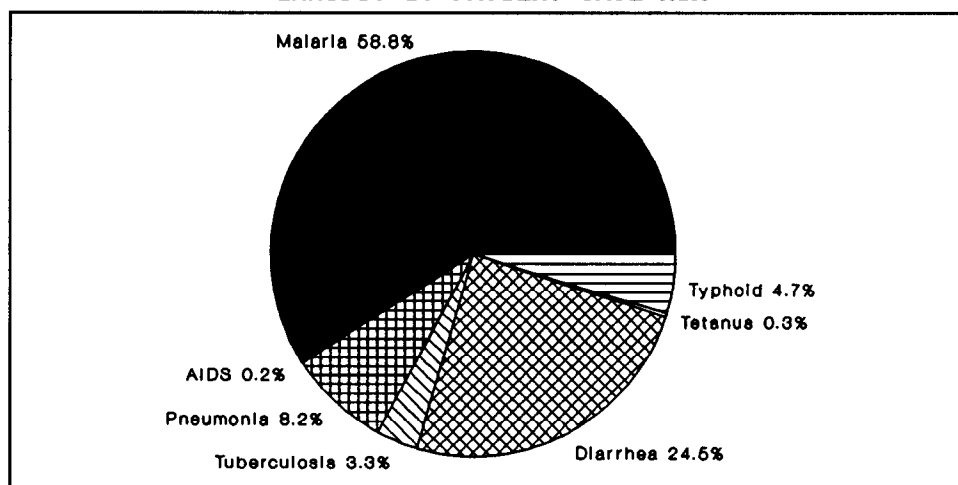
MH's patient case mix reflects only in part the incidence of disease in the hospital's catchment population. This is an indication that many illnesses prevalent in the community are not being treated by the hospital. For example,

the major cause of illness among adults in the Mirebalais area is tuberculosis. However, only three percent of all patients *seen* at the hospital test positive for tuberculosis. It is suspected that most cases of tuberculosis presenting themselves to a health facility are seen at a small mission facility in the Mirebalais area that specializes in diagnosis and treatment of tuberculosis cases, although this facility was not visited. It may also be that individuals with tuberculosis were not seeking care.

Many pregnant women are not being seen for prenatal checkups. Approximately one-third of all women of child-bearing age are pregnant at any given time in rural Haiti (300 per 1,000) (Cayemittes and Chahnazarian, 1989). The maternal mortality rate is estimated at five per 1,000 (Augustin, 1989). However, hospital records show only 200 prenatal visits per month and an average of only eight inpatient maternity visits (including deliveries) per month. More than 90 percent of all deliveries in rural Haiti occur in the home, and the presence of MH has not changed this pattern. While the hospital has a full-time obstetrician, most mothers elect to deliver at home because of long distances, opportunity costs, and cultural factors. Finally, no cases of measles appear in the hospital records. This may be a result of an immunization in the area that has over 70 percent coverage. Other major causes of illness seen by the hospital, including diarrheal disease, respiratory infections, and malaria, reflect the high incidence of these diseases in the rural population.

The hospital's predominant role in the community appears to be one of diagnosing and treating infectious diseases. This is supported by the high ratio of outpatients to inpatients at 22 to one. As shown in Exhibit 2 (below), approximately 1,796 outpatients are seen per month (or 21,552 per year), compared with 80 inpatients per month. In 1990, 3,876 patient-days were spent at MH. With 20 beds, the hospital has a potential of 7,300 patient-days per year. Therefore, the occupancy rate is approximately 53 percent.

EXHIBIT 2: MONTHLY SERVICE UTILIZATION

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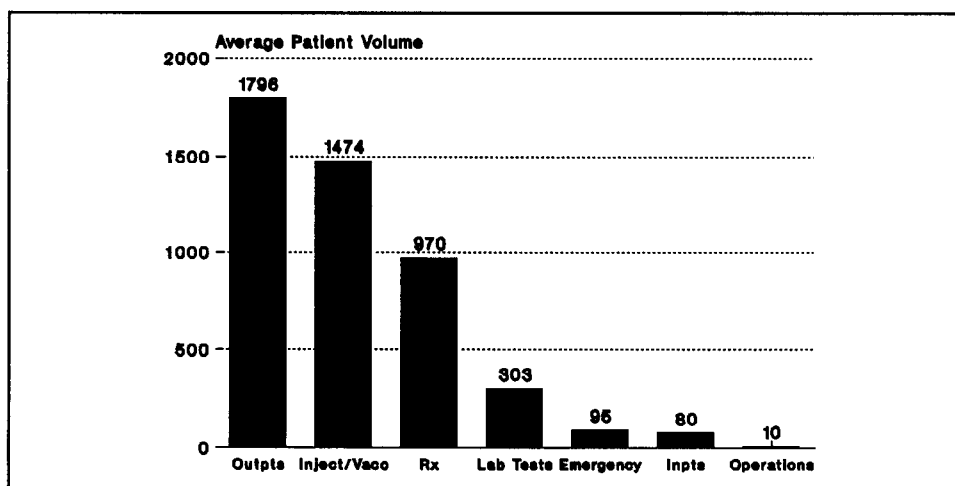
Among outpatient services, injections/vaccinations and services for adults, including ophthalmology and general medicine, were most frequently used (see Exhibit 3, below). Prenatal visits made up the smallest percentage of outpatient visits at 12 percent.

EXHIBIT 3: OUTPATIENT SERVICE UTILIZATION
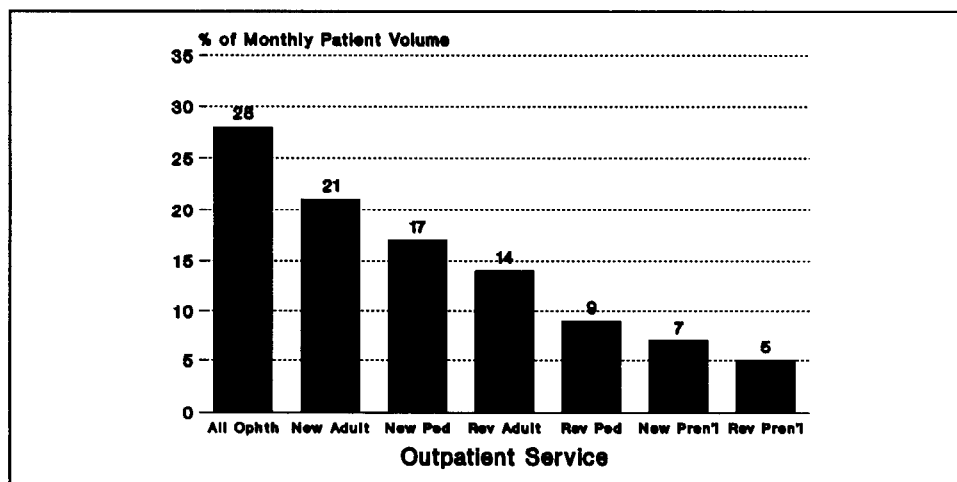
Among inpatient services, the general medicine ward saw 53 percent of all inpatients, making this the most frequently used service (see Exhibit 4, below). Ophthalmology and maternity ward services each saw only 12 percent of all inpatients. Low patient volume for these services is partially explained by the lack of physicians available in these specialties during 1990. Comparing 1989 with 1990 estimated service volume, the low level of service volume in the maternity and ophthalmology services becomes more evident (see Exhibit 5, below). In fact, between 1989 and 1990, service volume fell by more than 50 percent for each service. Similar results were found for surgery. In contrast, the medicine ward saw an increase in patient volume of almost 100 percent. A general medical practitioner was present during this period.

EXHIBIT 4: INPATIENT SERVICE UTILIZATION
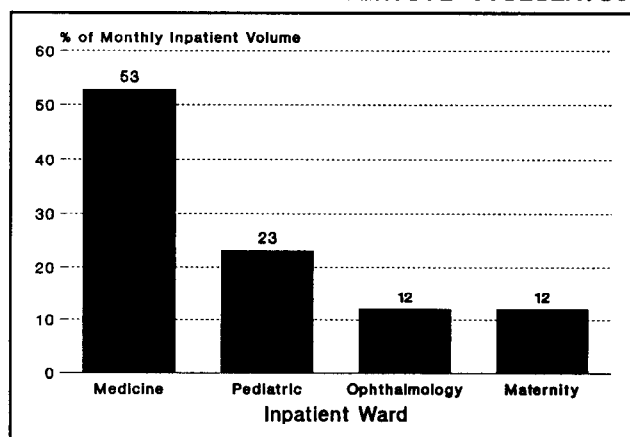
EXHIBIT 5: SERVICE VOLUME 1989-1990
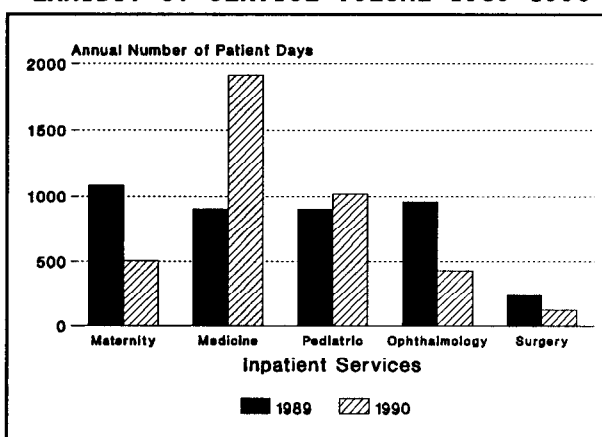
While certain services, such as medicine, showed an increase in volume since 1989, the overall trend in patient volume is downward. As shown in Exhibit 6 (below), patient volume decreased for many outpatient services between 1989 and 1990. A reason for the drop in services may be the political situation in the country, which worsened dramatically between 1989 and 1990. For example, in early 1990, General Avril was forced to resign. Uncertainty over who would succeed him and which political faction would reign is believed to have left many cautious about leaving their homes and villages, even if medical attention was necessary. Further, physicians traveled less frequently out to the hospital to see patients during this period.

EXHIBIT 6: SERVICE VOLUME 1989-1990
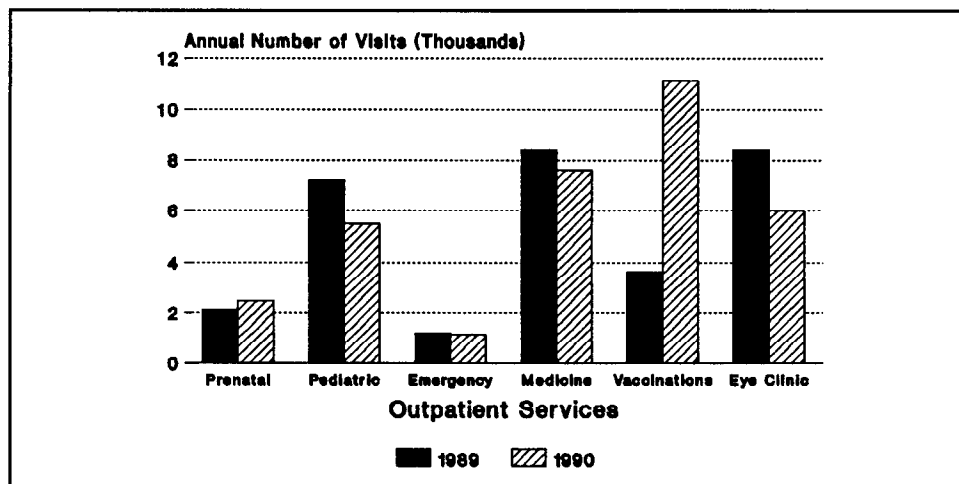
Between March and April 1990, as political changes were taking place, patient volume at MH hit its lowest point (see Exhibit 7, below). Inpatient volume decreased by approximately two-thirds between February and March 1990. Outpatient visits declined by 30 percent between January and April 1990. Between April and May 1990, when a temporary president was named, overall patient volume increased dramatically. For outpatient services, the number of patients reached its second highest level in seven months.

EXHIBIT 7: SERVICE UTILIZATION 1989-1990
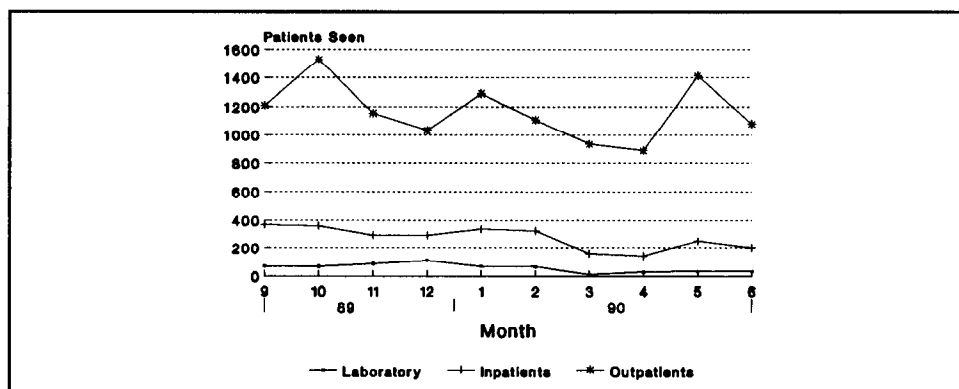
While it seems likely based on these data that patient volume is dependent upon the political stability of the country, it is also possible that other presently unknown factors influence volume. The economic downturn that is being felt throughout the country may be negatively affecting people's ability and willingness to pay for curative services. Between 1980 and 1988, the GDP average annual growth rate was -.2 (World Bank, 1990). In 1988, per capita GDP was US $388 and declined to US $351 in 1989 (constant US$ 1989) (Iglesius, 1990). In 1990, preliminary estimates show a dramatic decline in per capita GDP to $250 (US$ 1990).

3.2.2. Hospital Costs

A step-down allocation technique was used to calculate annual costs by service (see Appendix C). Using the methodology developed by Frederiksen (1989), line item expenses and other direct and indirect costs were allocated across the hospital's cost centers. Total indirect costs were allocated to service departments based upon patient volume or square footage of space. Indirect costs were added to direct costs per service to arrive at a total annual cost per service. Average costs per service unit were calculated by dividing the annual cost per service by annual service volume. Annual cost estimates for 1989 were compared with those made for 1990. (Appendix Exhibits C.1.1-C.1.5 and C.2.1-C.2.5, summarized in Exhibit 8, below). (All cost estimates are given in 1989 Haitian dollars for comparability. In 1989, US $1 = H $1 (official rate). In 1990, US $0.66 = H $1.) Estimated total costs include all costs of operating the hospital for one year, including donations and subsidies for salaries and utilities.

EXHIBIT 8 UNIT COSTS FOR MIREBALAIS HOSPITAL, 1989 AND 1990						
SERVICE DEPARTMENT	ANNUAL COST ($H 1989)		ANNUAL SERVICE VOLUME		AVERAGE COST PER UNIT	
	1989	1990	1989	1990	1989	1990
Prenatal Clinic	24,534	19,580	2,100 visits	2,448 visits	8	5
Pediatric Clinic	18,651	21,870	7,200 visits	5,484 visits	2	2
Emergency Clinic	12,937	5,283	1,200 visits	1,140 visits	7	3
Medicine Clinic	21,141	23,564	8,400 visits	7,620 visits	2	2
Vaccinations	10,074	8,815	3,600 immunizations	11,124 immunizations	2	0.45
Eye Clinic	43,698	29,327	8,400 visits	6,000 visits	3	4
Maternity Ward	22,308	16,853	1,080 pt-days	504 pt-days	15	25
Medicine Ward	18,426	14,949	900 pt-days	1,920 pt-days	15	6
Pediatric Ward	14,405	12,931	900 pt-days	1,020 pt-days	12	9
Ophthalmology Ward	20,289	14,747	960 pt-days	432 pt-days	16	23
Surgery	15,102	10,252	240 operations	120 operations	48	69
Laboratory	30,900	11,402	12,000 tests	3,636 tests	2	2
Pharmacy	46,242	23,015	27,000 prescriptions	25,000 prescriptions	1.22	0.7

Note: Costs include all operating costs to the hospital, inclusive of overhead, donations, and subsidies. Service costs include drug costs as allocated per department by patient volume (i.e., drugs given without a prescription).

To reflect more accurately the costs that MH (and PVO management) will have to cover in order to be self-financing, cost estimates as given above were modified to include only PVO costs (see Exhibit 9, below); subsidies and donations were therefore excluded in these calculations. PVO costs ranged from 60 to 80 percent of total operating costs (see Exhibit 10, below), indicating that from 20 to 40 percent of hospital costs are subsidized annually. Comparing 1989 with 1990 average PVO costs per service unit, costs have decreased from 1989 to 1990. The average cost per outpatient visit, as weighted across all outpatient visits, was $2.99 in 1989 and $2.90 in 1990.

EXHIBIT 9 UNIT COSTS FOR MIREBALAIS HOSPITAL, 1989 AND 1990 INCLUDING ONLY PVO COSTS						
SERVICE DEPARTMENT	ANNUAL COST ($H 1989)		ANNUAL SERVICE VOLUME		AVERAGE COST PER UNIT	
	1989	1990	1989	1990	1989	1990
Prenatal Clinic	17,635	13,351	2,100 visits	2,448 visits	8	5
Pediatric Clinic	12,153	13,569	7,200 visits	5,484 visits	2	2
Emergency Clinic	8,532	3,721	1,200 visits	1,140 visits	7	3
Medicine Clinic	13,827	14,552	8,400 visits	7,620 visits	2	2
Vaccinations	6,559	4,968	3,600 immunizations	11,124 immunizations	2	0.45
Eye Clinic	23,461	22,280	8,400 visits	6,000 visits	3	4
Maternity Ward	16,439	12,542	1,080 pt-days	504 pt-days	15	25
Medicine Ward	13,065	10,701	900 pt-days	1,920 pt-days	15	6
Pediatric Ward	10,393	9,342	900 pt-days	1,020 pt-days	12	9
Ophthalmology Ward	15,603	9.890	960 pt-days	432 pt-days	16	23
Surgery	11,621	8,321	240 operations	120 operations	48	69
Laboratory	19,620	9,020	12,000 tests	3,636 tests	2	2
Pharmacy	32,927	18,815	27,000 prescriptions	25,000 prescriptions	1.22	0.75

Notes: Costs do not include donations and subsidies but do include overhead and drug costs as allocated to service departments, based on patient volume (i.e., drugs given without a prescription), and other costs the PVO incurs in operating the hospital. In 1990, actual hospital records report a volume of only 11,640 prescriptions per annum, which would give an average cost per prescription of $1.62. However, under-reporting is estimated to be over 100 percent.

EXHIBIT 10 PVO SERVICE COSTS AS A PERCENT OF TOTAL ANNUAL HOSPITAL COSTS, MIREBALAIS HOSPITAL, 1989 AND 1990			
SERVICE	1989 (%)	1990 (%)	CHANGE (%)
Prenatal Clinic	71	68	-3
Pediatric Clinic	73	62	-11
Emergency Clinic	66	70	4
Medicine Clinic	65	62	-3
Vaccinations	65	56	-9
Eye Clinic	54	76	22
Maternity Ward	74	74	0
Medicine Ward	71	72	1
Pediatric Ward	72	72	0
Ophthalmology Ward	77	67	-10
Surgery	77	81	4
Laboratory	63	79	16
Pharmacy	71	82	11

While the cost changes generally were not large across outpatient services, as shown in Exhibit 11 (below), costs declined more across all inpatient services (Exhibit 12, below). The average cost per inpatient day was $14.54 in 1989 and $11.15 in 1990. These figures include overhead and drugs given without prescription. Pharmacy costs were $1.22 in 1989 and $0.76 in 1990 per prescription. (Note that original calculations of pharmacy costs per prescription, based on hospital records, estimated $1.62 per prescription (11,640 prescriptions per annum); however, under-reporting of prescriptions and drug utilization is suspected. A more accurate estimate of prescribing practices places the number of prescriptions per annum at approximately 25,000, for an average cost of $0.76 per prescription.)

EXHIBIT 11: ANNUAL OPERATING COSTS 1989-1990
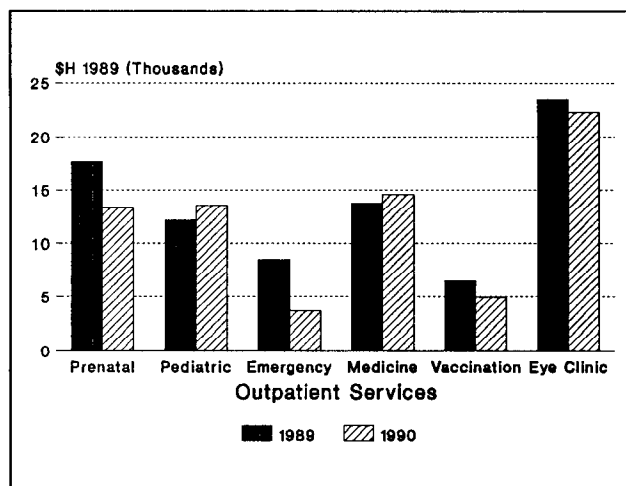
EXHIBIT 12: OPERATING COSTS 1989-1990

12
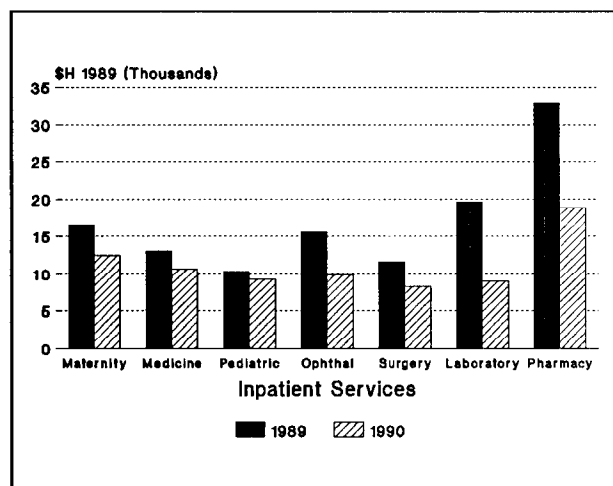
The major reason for the decline in average costs per service unit (especially for inpatients and pharmacy) between 1989 and 1990 is lower drug expenditure by the hospital. Non-prescription drug costs are allocated to inpatient services based on patient volume. This is an encouraging finding: between 1989 and 1990, management made an effort to more tightly control drugs allocated to the hospital and reduce wastage. The PVO's central office in Port-au-Prince maintains the pharmaceutical stock and sends supplies to the hospital only when hospital supplies are low. This effort seems to have paid off in terms of lowering costs and does not seem to have compromised quality. However, it was found that inventory records and control are still insufficient and must be improved before these findings can be confirmed. More data are required on drug utilization rates by service, monthly drug and medical supply acquisitions, and donation costs.

While overall service costs have declined, some service costs have increased. Cost per surgical intervention, for example, is 44 percent higher in 1990 than estimated for 1989, due to the low number of operations performed in 1990. Average costs per service unit are very sensitive to changes in patient volume at MH, because the ratio of fixed to variable costs is high (3.8 in 1989 and 4.8 in 1990). Fewer patients seen at the same fixed cost increases the average cost per service unit. Similar results were found for ophthalmology and maternity wards, which were shown in the previous section to have lower volumes in 1990.

It is unclear whether lower utilization rates are due to declining physician availability at the hospital (anecdotal information confirms this for maternity and ophthalmology services) or follow a general downward trend in patient volume that followed a worsening political and economic situation in the country. It is also possible that 1989 estimates were simply overestimates, due to insufficient information being available in mid-1989, only five months after the hospital opened. In any case, changes in average costs will have to be considered when fees are set. Without a consideration of potential changes in volume and therefore changes in the average costs per service unit, the hospital will most likely not recover its costs.

3.2.3. Pricing

Cost estimates per unit of hospital service can be compared with prices per service unit to provide an indication of the level of hospital cost recovery, assuming everyone pays the price charged per service unit. While it may be desirable, for equity reasons, to have certain subsidies (and/or patients) subsidize others, a reasonable starting point for analysis of prices is to compare them with service costs. From this comparison, it is evident that prices are still set far below costs for most services (see Exhibit 13, below). In the prenatal clinic, for example, outpatient fees cover only 16 percent of prenatal service costs per visit. Inpatient fees cover only seven to 28 percent of costs per inpatient visit. Only surgery, delivery, and pharmacy prices are currently set to cover costs.

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EXHIBIT 13 COMPARISON OF UNIT COSTS AND PRICE CHARGED PER UNIT MIREBALAIS HOSPITAL, 1990			
SERVICE	UNIT COST[1] ($H)	PRICE[2] ($H)	PRICE AS % OF COST (%)
Prenatal Clinic	5.00	0.80	16
Pediatric Clinic	2.00	0.80	40
Emergency Clinic	3.00	0.80	27
Medicine Clinic	2.00	0.80	40
Vaccinations	0.45	0.00	0
Eye Clinic	4.00	1.00	25
Maternity Ward[3]	75.00	5.00	7
Medicine Ward[3]	18.00	5.00	28
Pediatric Ward[3]	27.00	5.00	19
Ophthalmology Ward[3]	69.00	5.00	7
Surgery and Deliveries	69.00	70.00	101
Laboratory	2.00	0.80	40
Pharmacy[4]	0.76	1.50	197

1. Costs are average costs per service unit (outpatient visit or inpatient stay) that the hospital must cover to break even. These costs do not include donations and subsidies. Costs for surgery and deliveries are given per intervention. Lab and pharmacy costs are given per test and per prescription, respectively.

2. Prices for outpatient services have been averaged across new and revisit charges. New outpatients are charged $1.00 per visit and outpatient revisits are charged $0.60 per revisit.

3. Inpatients are charged per patient stay; therefore, average costs per service unit (ACS) are given per patient stay. ACS assumes a three-day average length of stay per inpatient.

4. Pharmacy costs assume a prescription volume of 25,000 per annum, although actual hospital records report a volume of 11,640 (which would give an average cost per prescription of $1.62).

To determine how far above and below cost prices can be set for different services so that the hospital recovers its costs (while maintaining a sufficient patient volume), a break-even analysis can be beneficial. Using a break-even analysis, patient revenues are calculated based on prices charged and the volume of patients by service. Revenues are subtracted from costs to determine the revenue required to break even. If prices for different services are manipulated around average costs per service unit, depending on demand and need for the service, the break-even point can be achieved. Such a method allows fees to be set more appropriately and fees can be changed while maintaining the break-even point.

As noted above, the equity-related goals of the hospital should not be overlooked in price setting. If MH is supposed to serve primarily as an outpatient clinic, higher prices should not be charged that would deter patients from seeking outpatient care. Higher prices may allow the hospital to reach a financially viable position but may cause a drop in demand. Alternatively, if more inpatients are desired, inpatient prices should not be set above the population's willingness (or ability) to pay. Outpatient revenue could subsidize more expensive inpatient care that the population demands or may demand but cannot pay for at cost. Therefore, it may be best from a societal point of view to raise fees for certain "private" services so that the additional revenues generated can support "public" services. In any case, a pricing strategy that maximizes the hospital's ability to best serve its population's needs is desired.

3.3 BREAK-EVEN ANALYSIS

A spreadsheet tool was developed for calculating break-even status of MH, given different fee schedules and patient volumes (see Appendix D). Examples of the spreadsheet, which calculates the break-even surplus or deficit based on monthly revenue and cost data, are provided in Appendix E. Under Scenario 1, the base scenario in year one, the following assumptions are employed:

- Grant income totals $6,500

- Fee collection is 90 percent -- assumes exemptions are needed at a level of 10 percent

- The current pricing schedule is used -- the current pricing schedule is based on MSPP standards, except for surgery, deliveries, and drugs, which are set close to cost

- Cost subsidies exist for certain salaries and medical costs

- Pharmaceutical wastage is 10 percent

- Patients receive an average of .5 prescriptions per visit

- The exchange rate for pharmaceuticals is Haitian $1.51 per US $1

- Total patient volume is 2,528 per month across all services

- Inflation is assumed to have no effect in the base year and is therefore set at zero

- Population growth rate, income and price elasticities of demand, and price increase variables do not affect this scenario, because it is the base year

The estimated current break-even status of the hospital shows a small surplus of approximately $298 per month in 1990 (see Exhibit 14, below). If fee

collection were at a level of 100 percent (no exemptions), the surplus would be slightly higher, at $360. This indicates that, given the latter conditions (including grant income) the current fee schedule allows the hospital to gain a small amount of net income and break even.

EXHIBIT 14 BREAK-EVEN SCENARIO SUMMARY MIREBALAIS HOSPITAL, 1990				
VARIABLE	SCENARIO 1	SCENARIO 2	SCENARIO 3	SCENARIO 4
Grant Income	$6,500	$0	$0	$0
Fee Collection	90%	50%	100%	100%
Price Increase (real)	0	0	0	25%
Volume Increase	0	0	0	0
Patient Volume	2,528	2,528	2,528	2,200
Break-Even	$298	-$9,402	-$6,140	-$5,147

In all the scenarios:
price elasticity = -.2
income elasticity = .887
per capita GDP = $350
inflation = 0 (factored into base year at 8%)
population growth rate = 2.2 per 1,000
number of prescriptions per patient = 0.5
Year 1

However, several variables deviate from the situation given under Scenario 1, and therefore fees from patients are not covering hospital operating costs. This is consistent with the deviation of current prices from unit service costs shown previously in Exhibit 13 (above). In 1991, the hospital will no longer receive grant income. Further, fee collection averages only 50 percent across all services. Without grant income and a fee collection rate of 50 percent, the hospital could face a deficit (negative net income) of $9,014 per month in the current year (Scenario 2). If fee collection rates were increased from 50 to 100 percent, the current deficit would be reduced to approximately $6,140 per month in year one, assuming an annual growth rate of 2.2 percent (J. May, 1990) and 100 percent fee collection (Scenario 3).

A 25 percent fee increase for all services except surgery, maternity care, and deliveries, along with 100 percent fee collection (Scenario 4) would decrease the current deficit to $5,147 in year one. Implementing Scenario 4 would decrease the current deficit by over 40 percent in one year. Based on the latter results, it seems that fees will have to be raised in order to meet costs. However, more scenario tests and a sensitivity analysis will better determine the effects of other variables on the break-even point and how much prices must be raised to offset these effects.

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Other scenarios were tested in a sensitivity analysis, using the break-even spreadsheet (Appendix E). The sensitivity analysis tested optimistic and pessimistic assumptions to show how the break-even point would be affected by changes in the original assumptions. Projections for breaking even in future years were also made. Results are given in Appendix E. Variables that were tested included changes in year, per capita GDP under different income elasticities of demand, price changes under different price elasticities of demand, volume changes, varying numbers of prescriptions per patient, changes in population growth rate, varying inflation and costs (including subsidies), changes in pharmaceutical wastage, and varying foreign exchange rates. In these scenario tests, grant income was kept at zero. (Note that price elasticity of demand is the percentage change in demand per percentage change in price. Income elasticity of demand is the percentage change in demand per percentage change in income. Elasticities may vary by fee level or type of service; however, this model held price and income elasticities constant.)

When all variables were changed independently, it was found that cost increases had among the largest effects on the break-even point, including inflationary increases, cost per prescription, and the number of prescriptions per patient. For example, 20 percent inflation could increase the current deficit by approximately 40 percent. Doubling the cost per prescription, without increasing the price, would increase the current deficit by approximately 35 percent. Doubling the number of non-prescription drugs used per patient (e.g., patients are sicker), would increase the monthly operating deficit by 50 percent. This assumes drug costs are a component of average cost per patient. Patients are not currently required to pay an additional charge for these non-prescription drugs.

It is clear from the sensitivity analysis that fees must be raised and patient volume increased for the hospital to break even. As shown in summary Exhibit 14 (above), a one-time fee increase of 25 percent would decrease the monthly deficit by approximately $1,000 (all other variables are held constant). At 100 percent fee collection, an annual fee increase of 25 percent (excluding deliveries, surgery, and vaccinations) would allow the hospital to break even in six years (in present value terms). A volume increase of 100 percent, resulting from an intensive marketing campaign and/or quality improvement, could decrease the original deficit by about 20 to 30 percent in one year. To break even in the current year, grant income or another source of outside revenue will be required. It is unlikely that the hospital will be able to subsidize outreach services in the near future without such additional non-patient revenue.

Other fee increases may be necessary to offset the cost increases to services such as surgery and maternity. The spreadsheet allows the user to simulate the effect of such price changes. For example, if prices were raised 25 percent and the charge per prescription were raised by 100 percent, the original deficit could be reduced by two-thirds in one year and could break even in year 4 (Appendix E). A 30 percent increase in fees for outpatient services along with a 10 to 15 percent price increase for services with lower utilization, such as the maternity ward, would achieve a similar effect. However, it may not be desirable to increase fees for services of low utilization. Instead,

outpatient fees could be raised more so that inpatient fees are kept lower. Increasing inpatient volume would lessen the need to either raise inpatient fees or subsidize inpatient costs through price increases for other services.

A small increase in fees may allow the hospital to become self-sufficient over time. However, more data are required for future projections on break-even and setting of prices. For example, a price elasticity of -.2 was used in the scenarios above (Jimenez, 1987). However, the true sensitivity of Mirebalais' catchment population to prices for curative services is not known. If the population is less price sensitive, higher prices can be charged before demand and profits begin to fall. Similarly, if demand (and utilization of curative services) is less sensitive to changes in income than .887 (i.e., income elasticity is smaller), only large declines in income will lead to a decline in hospital profits. Elasticities also will vary by type of service and fee level. As a rough estimate, until more information is available, a utilization drop of more than 20 percent may mean prices are set too high (Akin et al, 1987).

Several modifications can be incorporated into the break-even analysis. First, one variable that was not considered in the current analysis is the unit costs of services. That is, hospital administrators may be able to increase productive efficiency, and reduce unit costs -- leading to a corresponding decrease in the need to generate additional revenues. Second, some of the calculated costs, notably the salary of the manager and vehicle costs, have been posted against the hospital on a 100 percent basis. It may be more appropriate to reduce their contribution to the hospital costs: the cost of the hospital manager will disappear from the hospital budget as of the fall of 1991; and only one-third of the vehicle-related costs should be posted to the hospital budget. Given these changes, the revenue needed to break even under Scenario 3 is close to $10,000 per month (instead of $12,716), or approximately $16 per bed per day.

3.4 RECOMMENDATIONS FROM THE BREAK-EVEN ANALYSIS

It is recommended that a survey be conducted of the hospital's catchment population to estimate the price and income elasticities of demand for curative services and whether there are different sub-sectors of the market (i.e., different income groups) with different demand characteristics. This information will help guide future pricing strategies for breaking even at MH over time and marketing of hospital services to this population. This information can also be used to guide exemption policies at the hospital, indicating for example whether 10 percent is a reasonable level of indigent patients. It may also be useful to compare prices charged at MH with those being charged at similar private facilities elsewhere in Haiti.

More information is needed on drug costs to the hospital and drug utilization, in order to estimate more accurately future drug costs and charges to patients. A separate drug fee may need to be instituted to cover non-prescription drug costs. Inefficiencies such as low staff availability but full payment of salaries should also be examined further. Because costs have a potentially large effect on the hospital's ability to break even, cost

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containment will be as important for cost recovery at MH as will be pricing and revenue generation. Improving accounting and financial control systems, as will be discussed in subsequent sections, should aid in cost control.

Pre-payment mechanisms could also be explored as an alternative financing mechanism for the hospital. This would entail setting up either partial or comprehensive health plans for the catchment population and determining ways of minimizing the risks due to adverse selection and moral hazard. While this will not be pursued further here, the break-even spreadsheet could be used to simulate the charges required to cover costs of such a health plan. Assumptions about who would use such a plan, utilization rates, and levels of co-payments should be carefully considered.

In summary, recommendations for breaking even and pricing of services include the following:

1) Perform a market survey or demand study to determine the catchment population's ability and willingness to pay for MH's services;

2) Improve physician availability at the hospital, such that at minimum one to two physicians are present during clinic hours;

3) Market services to increase patient volume, especially that of inpatients;

4) Gather more information on current drug costs and utilization by service;

5) Consider raising fees 25 percent for all services and drugs except surgery, maternity, deliveries, vaccinations (unless the market study shows otherwise);

6) Pursue alternative financing mechanisms for the hospital that could serve to supplement patient revenues, including a pre-payment plan; and

7) Use new data to re-perform break-even analysis to reassess pricing changes over time.

4.0 PATIENT REGISTRATION AND FEE COLLECTION

4.1 INTRODUCTION TO ANALYSIS OF THE ADMINISTRATIVE SYSTEM

Mirebalais Hospital currently receives funding from the Voluntary Agencies for Child Survival Project (VACS) and internally-generated revenues (i.e., patient fees). VACS income, estimated at $6,500 for 1990[1], will cease in 1991 and therefore will not be considered further in this section. Patient fees are collected for inpatients (hospitalizations), the sale of drugs (primarily to outpatients), injections, laboratory diagnostic tests, and for outpatient services. Current methods for collection of fees, as well as patient registration, are described below. Weaknesses in the current system are discussed, and alternatives are proposed. In addition, a plan for monitoring and evaluation for financial control is presented.

## 4.2 CURRENT PATIENT REGISTRATION AND FEE COLLECTION

4.2.1. Outpatient System

The following system currently is used to register outpatients and collect fees (see Exhibit 15, next page):

1. At his or her arrival at the hospital, the patient goes to the admissions desk, where he/she pays a visiting fee of $1 if new and $0.60 if a revisit;

2. At the admissions desk, the patient receives a white tag if new and a yellow tag if a revisit;

3. The patient goes to the statistician, where a form is filled out or a new file is opened, depending on the patient's status;

4. The patient goes to the waiting room and waits to see a clinician;

5. The patient is called by the physician or nurse. At the end of the consultation, a pre-numbered medical slip is filled out with the medicine to be prescribed and the lab test to be done. The medical slip is given to the patient to bring to the next level of service;

6. The patient returns with the slip to the central cashier to pay for the medicine or for the next service to be rendered (e.g. injection, lab test, pharmacy);

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[1] Income is estimated for the hospital because the grant is given to Eye Care MARCH for all of its activities. Funds are not currently earmarked by expenditure to clearly delineate the amount of the grant income being used for Mirebalais Hospital.

7. At closing time (15:50 daily), the cashier inscribes on a piece of paper the amount of money received for each category of service, calculates the total, and sends the information and cash to the accountant;

8. The accountant enters the amounts by service in their respective columns in the accounting ledger, transfers the same information onto an Eye Care MARCH form, and signs the form;

9. The Eye Care MARCH form and cash received by the accountant are kept in the accountant's desk, then sent on to the central administrator in Port-au-Prince every eight days with a messenger, who signs a receipt upon obtaining the form and cash from the accountant;

10. The central administrator signs the form upon its arrival in Port-au-Prince, signifying its receipt.

Patients claiming indigence are exempted by the cashier. Exemption is based on patients' claims of inability to pay, by their geographic location in the area, or type of employment (or source of income). Indigent patients currently comprise less than 10 percent of all patients at the hospital and are considered by hospital staff to be an insignificant number to warrant much attention.

EXHIBIT 15: PATIENT FLOW CHART

External Clinic   **Hospitalisation**

```
┌──────────────┐              ┌──────────────┐
│   Patient    │              │   Patient    │
└──────┬───────┘              └──────┬───────┘
       │                             │
┌──────▼───────┐              ┌──────▼───────┐
│Admission Desk│              │Admission desk│
│  & Cashier   │              └──────┬───────┘
└──────┬───────┘                     │
       │                             │
┌──────▼───────┐              ┌──────▼───────┐
│   Archives   │              │Hospitalisation│
│ & Statistics │              └──────┬───────┘
└──────┬───────┘                     │
       │                             │
┌──────▼───────┐              ┌──────▼───────┐
│ Waiting Room │              │    Exéat     │
└──────┬───────┘              └──────┬───────┘
       │                             │
┌──────▼───────┐                     │
│Physician Room│                     │
└──────┬───────┘                     │
       │                             │
┌──────▼───────┐◄────────────────────┘
│ Cashier with │
│ Prescription │
└──┬────┬────┬─┘              Cash Flow
   │    │    │
┌──▼┐ ┌─▼──┐┌▼────────┐         Chart
│Lab│ │Injec││Pharmacy │
└───┘ │tion ││         │
      └──┬──┘└─────────┘
         │
┌────────▼──────┐
│  Accountant   │
│    Office     │
└────────┬──────┘
         │
┌────────▼──────┐
│ Administrator │    21
│  in P-au-P    │
└───────────────┘
```
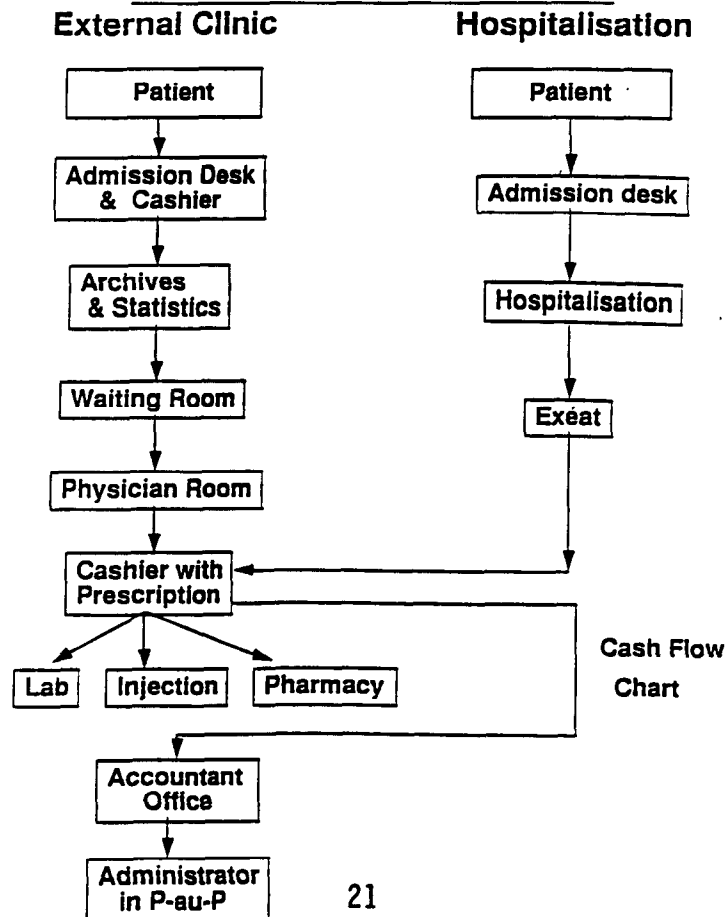
4.2.2. Inpatient System

For inpatients, the nurse registers the patient to be admitted in a record book, including name, type of intervention, date of admission, fees to be paid, and date of release (upon departure of patient). Types of interventions performed by MH include: circumcisions, "hermiorraphie", caesarian sections, hemorrhoidectomies, anal fissures, appendectomies, tubectomies, amygdalectomies, removal of ovarian cysts, handling of ectopic pregnancies, myomectomies, hydroelectomies, post-op stitches, phimosis, therapeutic curetage, drainage of abscesses, casting, and "phlegmon".

Inpatients pay the nurse in charge at the time of release from the inpatient ward. The nurse enters the amount in the record book, along with the date. On the hospitalization slip, the same is recorded, and a balance is noted. This slip is divided into two identical parts, one portion for the cashier and one portion for the admissions desk. The cashier receives his/her portion of the slip along with the amount received by the nurse at the end of the day, records the transaction in the cashier's report, and submits the report, hospitalization slip, and cash to the accountant at the end of each day (see Exhibit 15, below). The accountant and administrator then record the information as described for outpatients in steps 8 through 10 above.

4.3 WEAKNESSES IN THE CURRENT SYSTEM

Based on careful review of the procedures currently used for admitting patients and collecting fees as described above, several weaknesses were found. The main problem is that there are few controls over collection of fees and cross-checking of patients seen with amounts of fees collected. Specifically, the following was found:

1.   The person who handles the admissions slip is also in charge of receiving admissions fees;

2.   The person who receives the prescription slip also receives fees to be paid for drugs, lab tests, and injections (the prescription slip is used by the physician to order lab tests, drugs to be prescribed, and injections);

3.   The slip used by the cashier for making his/her daily report is not pre-numbered for tracking purposes;

4.   The cashier receiving the inpatient fees has no knowledge of the number of patients actually admitted, because inpatients are registered and admitted directly to the inpatient service;

5.   No control is implemented to verify the amount of money received by the cashier;

6.   There is no control-check of the money received by the accountant;

7. The safeguarding of cash received by the accountant is inadequate; and

8. The accounting system in place at the hospital is inadequate for recording and tracking funds received and used.

As a result of the above problems, it is very difficult for hospital administration to track the flow of patients through the hospital, how many patients have paid, patients' balance (i.e. services provided on credit), and the flow of revenues received from patients. No systematic method exists for verifying patients' claims of indigence, as described previously. No one is solely responsible for fee collection or for tracking that it is implemented properly. Improvements in the areas outlined above should help to improve rates of fee collection, which currently average only 50 percent, and to monitor patient volume. The following section will suggest specific ways in which the problems identified can be addressed and improved, at the outpatient clinic and inpatient ward levels.

4.4 PROPOSED PATIENT REGISTRATION AND FEE COLLECTION SYSTEM

Given the needs of the hospital, and strengths and weaknesses of the current system, a modified patient registration and fee collection system is recommended. Such a system would have the twin objectives of capturing a larger proportion of the scheduled revenues from hospital users, and tracking the revenues closely within the hospital administrative mechanisms. The system components are described below.

4.4.1. Proposed Outpatient System

For outpatients, the following system is suggested:

1. Two people are stationed at the admissions area, one receiving the admissions fee and one registering the name of the patient in the admissions book;

2. The admissions book has five columns, including date, name of patient, status of patient (new or revisit and number), payment status (amount paid, credited, or exempt). Payment status is in two columns (see Exhibit 16, below);

3. The admissions desk has two types of tokens for new and revisit patients respectively. New patients are recorded under an odd numbering system from one to 149 and revisit patients are recorded under an even numbering system from two to 150;

4. The admissions clerk records the token number in the proper column of the admissions book;

5. Upon receiving the token, the patient pays the cashier the appropriate admissions fee;

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6. The money collected by the cashier is kept in a security box instead of an open box or carton;

7. After paying, the patient visits the statistician and then waits to see a clinician (as is done under the present system);

8. After the patient consultation, the patient returns to the cashier's desk with the prescription slip, hands the slip to the admissions clerk, who then verifies whether the medicine prescribed is available. If so, the clerk inscribes in the respective column of the book the amount and type of medicine given, whether it was paid for, credited, or given free (exempted), and the amount paid. The amount of medication and fee paid are also recorded on the prescription slip;

9. The patient pays the amount indicated on the slip to the cashier, who stamps the slip;

10. Each service maintains a record book, where the name of the patient is registered and the types of drugs given and services rendered are recorded;

11. At closing time, each admissions clerk balances his/her book;

12. At the end of the day, the cashier counts the money collected in the security box and verifies this amount with the records kept by the admissions clerk;

13. The cashier fills out the cash receipt form and both the cashier and the admissions clerk sign the form, give the form and cash to the accountant, and receive a receipt from the accountant;

14. At the end of each day, each service (including lab, pharmacy, injections) sends their report to the accountant's office on a special reporting form prepared by the accountant (see Exhibit 16, next page);

15. The archives statistician takes all tokens received from patients during the day to the accountant's office, after which the accountant counts the numbers of new and revisit tokens and cross-checks the amount appearing on the cash receipt report submitted by the cashier; and

16. The accountant makes the same counter-check for all the reports submitted by the different services, registers the amount received from each service in the proper column in the register book, and puts the money in a safe box until the money is sent to Port-au-Prince.

EXHIBIT 16: PATIENT REGISTRATION/ADMISSIONS FORM

Date	Name	New patient	Old Patient	Prescription						Total
				Injection		Lab-test		Drugs		
				Paid	Free*	Paid	Free*	Paid	Free	

* Noted are amount credited or provided free and whether credit or exempt.

4.4.2. Proposed Inpatient System

The following system is proposed for registering inpatients and collecting fees:

1. The admissions clerk records the patient admission on a pre-numbered form, in triplicate, with the patient's name, intervention(s), price, and payment modality. One copy is kept by the inpatient ward, one copy is given to the accounting office, and one copy is given to the statistician in archives;

2. The patient takes the inpatient copy to the department where the nurse opens a file in the patient's name, noting the date of arrival, intervention, date of release (when it occurs), the charge, and the balance in the file and on the copy of the pre-numbered form;

3. Once the accountant receives the accountant's copy from the admissions desk nurse, the accountant registers in the inpatient book the patient's number, date of admission, type of intervention, fees charged, and balance (accounts receivable);

4. Upon the patient's release, the patient takes the inpatient copy to the cashier, where the patient pays the fees charged or a portion thereof. The cashier inscribes the information onto the inpatient copy, signs the copy, returns the copy to the department, and records the amount paid in the daily inpatient record.

5. The accountant cross-checks this information as for outpatients, on a daily basis.

It is also suggested that, to improve fee collection of accounts receivable, a fee collector should be hired to visit villages and collect fees. This could greatly reduce accounts receivable, especially for those patients who live in rather inaccessible areas but could otherwise pay for services. While such a fee collector is advisable, a small cost-benefit analysis should be performed (i.e., feasibility assessment) by hospital management to determine if the amount of fees the collector could collect outweighs the costs of hiring the fee collector and supplying him/her with fuel and transportation.

Despite their relatively low numbers, indigent patients should not be ignored in the setting of policy and procedures for handling patients. A systematic method for verifying claims of indigence should be established. This could be part of the fee collector's job, assessing indigence while visiting villages and homes.

4.5 PROPOSED ACCOUNTING SYSTEM -- MIREBALAIS HOSPITAL AND CITY*MED

Mirebalais Hospital and the City*Med Project will both be run under the auspices of Eye Care MARCH. Therefore, it was felt that both the hospital and

City*Med should have similar accounting systems. This should help to improve overall financial control of all Eye Care activities. The initial design of City*Med's accounting system was completed by Ms. Huff-Rousselle (see Appendix F). This section is the next step in the design process and focuses on the source documents (the first portion in Diagram 2 and the first step in the information flow hierarchy). This section addresses both Mirebalais Hospital and City*Med.

The accounting system initial design submitted by Huff-Rousselle is based on the principle of "one-book accounting". This "do-it-yourself" system provides easily-prepared financial reports, so that an organization has a picture of its financial situation at any given moment. It provides an effective way to keep basic records that any microenterprise must have in order to prosper. The one-book accounting system was developed especially to meet the needs of people in retailing, who may not have the time or staff assistance necessary to maintain sophisticated accounting procedures.

4.5.1. Source Documents

The combination journal, also known as the integrated or one-entry journal, is the core of this accounting and financial control system. The one-entry journal has been described by Huff-Rousselle elsewhere (Huff-Rousselle, 1990). For the journal to be effective, it should be supported by necessary records (i.e., source documents). The first supporting document to the system is the daily entry sheet, prepared by the cashier to balance the cash on hand at the end of the day (see Exhibit 17, below). This document is sent on to the accountant's office, where the information is used to make a single entry into the combination journal.

EXHIBIT 17: DAILY ENTRY SHEET SAMPLE

MIREBALAIS HOSPITAL
DAILY ENTRY SHEET
DATE ------------ · DAY ----------

Opening cash Balance	·	xxxxx
Plus: Cash - received		
Admission fees	xxxx	
Injection	xxxx	
Lab - test	xxxx	
Sale of Drugs & Medicine	xxxx	
Total	xxxx	
Accounts receivable - Hospitalization	xxxx	
Other income	xxxx	
Cash received		xxxxx
Less Cash paid out		
Purchase & transports	xxxx	
Expenses	xxxx	
Accounts payable Paid	xxxx	
Deposit Box	xxxx	
Cash Paid out		xxxxx
Closing cash balance		
Less actual Cash balance		xxxx
Cash balance short cover		

In order to make entries into the daily entry sheet, as illustrated in Exhibit 18 (below), and balance cash, the following steps should be followed:

1. Enter the opening cash balance. This is the "cash float" that the accountant gives the cashier at the opening of each day;

2. Work out all cash received throughout the day, including fees collected from services, inpatients, bank withdrawals, and sum the total cash received for the day;

3. Determine the cash paid out for the day, including purchases and transport, expenses, accounts payable paid, bank deposits, and sum the total cash paid out for the day; and

4. Determine the closing cash balance by summing the opening cash balance with cash received minus the cash paid out.

EXHIBIT 18: ACCOUNTS RECEIVABLE LEDGER WITH EXAMPLE

Sample Aged Accounts Receivable Report
Israel General Hospital
January 31, 1981

A. General

Time Outstanding	Amount Current Month	Amount Last Month
0-30 days	$12,500	$10,000
31-60 days	9,750	9,000
61-90 days	7,000	8,500
91-120 days	5,000	4,000
121-180 days	3,000	—
Over 180 days	—	—
Total Outstanding:	$37,250	$31,500

Source: Berman and Weeks, 1982.

ACCOUNTS RECEIVABLE LEDGER

Date	Description of services	Fees charged	Amt Received	Balance

A single entry is then made into the combination journal based on the above procedures. The column numbers on the left-hand side of the form should conform to the appropriate columns in the combination journal, thereby facilitating proper entries.

The second source document is the accounts-receivable ledger. In this ledger, the accountant keeps a record of the amounts charged, amounts received, the balance owed by the patient, and the types of services rendered. The sum of the amounts owed should always equal the accounts-receivable balance of the combination journal, as this sum is recorded in the combination journal once it has been calculated. Examples of this report/ledger are provided in Exhibit 18 (above).

4.5.2. Charts of Accounts

As true as it is that all institutions or organizations follow the same fundamental rules of accounting, each organization must still develop and maintain its own system of financial control and information that is unique to it. The charts of accounts proposed here are designed to meet the needs of Eye Care MARCH and its Mirebalais Hospital and City*Med Project components. A chart of accounts is a coded list of accounts that have been classified based on their nature and also on the various activities of the organization. These accounts make up the format for the journal. Their main function is to facilitate the interpretation of financial information as entered into the journal.

As the system is established, it is imperative to ensure that all transactions affecting the balance sheet are distinctly registered. The chart of accounts for City*Med will consist of the following categories and numbers that can be sub-categorized as follows:

Assets	100 - 300
Liabilities	400
Grant Capitalization	500
Revenues	600
Expenses	700
Special Account	800.

A detailed chart of accounts for City*Med, Mirebalais Hospital, and for Eye Care MARCH is provided in Appendix G.

4.6 MONITORING AND EVALUATION PLAN FOR FINANCIAL CONTROL

The previous section discussed ways of improving the flow of financial information from the operations level to the combination journal (see Exhibit 19, below). This section will focus on the final portion of the flow-chart, namely financial reports and monitoring tools. It is hoped that, by using the reports and tools suggested here, financial control will be improved at Eye Care MARCH. For this report, this applies in particular to Mirebalais Hospital.

Le flux de l'information comptable

FLOW OF FINANCIAL INFORMATION

```
┌─────────────────────────────────────┐
│             Opérations               │
│             OPERATIONS               │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│     Etablissement des pièces         │
│         justificatives               │
│    DEVELOPMENT OF SOURCE DOCUMENTS   │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│      Opérations enregistrées         │
│      dans les livres journaux        │
│   DOCUMENTATION IN LEDGERS/JOURNALS  │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│      Report sur le Grand Livre       │
│          GENERAL LEDGER              │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│     Etablissement des rapports et    │
│          états financiers            │
│   DEVELOPMENT OF FINANCIAL REPORTS   │
└─────────────────────────────────────┘
        │           │           │
        ▼           ▼           ▼
```

Rapport Mensuel   **Bilan**   **Etats des Résultats**
MONTHLY REPORT   BALANCE SHEET   FINANCIAL STATEMENT

4.6.1. The Balance Sheet

The balance sheet is the major document derived from the combination journal. This sheet describes the financial position of the hospital at any given time and can be used on a monthly, quarterly, or annual basis. A sample balance sheet is provided in Exhibit 20 (below). For MH, it is recommended that the hospital use a monthly balance sheet to begin the process of keeping a balance sheet on a regular basis. After the first quarter, the frequency of balance sheet reporting can be reduced to once per quarter. If it is evident that the figures in the balance sheet are not changing significantly and therefore do not need constant monitoring, management may wish to reduce its frequency to once per year.

EXHIBIT 20: SAMPLE BALANCE SHEET

Unger Memorial Hospital

Sample Balance Sheet as of December 31, 1981

Assets

Current Assets	1969	1970
Cash	$ 125,000	$ 27,000
Marketable Securities	20,000	115,000
Accounts Receivable—Patients	175,000	200,000
Accounts Receivable—Others	25,000	20,000
Inventory	40,000	45,000
Total Current Assets:	$ 385,000	$ 407,000
Fixed Assets		
Land	$ 50,000	$ 50,000
Equipment (net of depreciation)	825,000	875,000
Buildings (net of depreciation)	1,750,000	1,700,000
Total Fixed Assets:	$2,625,000	$2,625,000
Other Assets		
Endowment Fund A—Unrestricted	$ 75,000	$ 90,000
Endowment Fund B—Restricted	1,000,000	1,000,000
Total Other Assets:	$1,075,000	$1,090,000
Deferred Charges		
Prepaid Insurance	$ 5,000	$ 7,500
Total Deferred Assets:	$ 5,000	$ 7,500
Total Assets:	$4,090,000	$4,129,500

Liabilities & Net Worth

Current Liabilities		
Accounts Payable	$ 138,000	$ 150,000
Accrued Wages	22,000	30,000
Total Current Liabilities:	$ 160,000	$ 180,000
Long-Term Debt		
Mortgage—Building A	$1,000,000	$ 950,000
Loan	300,000	300,000
Total Long-Term Debt	$1,300,000	$1,250,000
Net Worth	$2,630,000	$2,699,500
Total Liabilities & Net Worth:	$4,090,000	$4,129,500

Source: Berman and Weeks, 1982.

   While the balance sheet can itself provide useful information to management about the financial status of the institution, comparing balance sheets over time is even more useful because information about changes in financial position are provided. For example, assets and liabilities should be assessed relative to what they were in previous periods. Changes in one or more entries in the balance sheet may signify trouble for the institution that should be addressed without delay. On the other hand, improvements can be monitored as well.

4.6.2. Ratios

To evaluate a balance sheet and compare it to previous periods, ratios can be helpful. Ratios can be used as quantitative indicators of the relationships between various items on the balance sheet (Berman and Weeks, 1982). For MH, the periodic use of several ratios is recommended; however, it should be kept in mind that they can only provide guidelines for action and are unique to the institution being analyzed. In and of themselves, the ratios provide little useful information except when compared to standards set for the institution and analyzed over time. Suggestions for standard ratios to be used at MH will be discussed below after each ratio is presented. Suggested ratios include the current ratio, quick ratio, average fee collection period, and inventory turnover. All are derived from balance sheet information.

The **current ratio**, the ratio of current assets to current liabilities, is considered a basic indicator of financial position. For MH, seeking to break even, an acceptable ratio would be greater than or equal to one. If the hospital were seeking some profit, to subsidize other health activities in the area, for example, a higher ratio would be desirable. In many for-profit U.S. hospitals, the current ratio may be as high as five. Obviously, the size of this ratio depends on the goals of the institution; therefore the standard depends on those goals and is not a constant.

The **quick ratio**, the ratio of cash plus accounts receivable to current liabilities, can be used to check the current ratio. However, because it does not include inventory assets, it is a better test of liquidity than is the current ratio. The quick ratio will be less than the current ratio but, for Mirebalais Hospital, it should be as close to one as possible.

The **average fee collection period** is a useful indicator for monitoring the time it takes to collect accounts receivable. It is calculated by multiplying the annual accounts receivable by 360 days and dividing by annual credit sales (i.e., services rendered on credit). Currently, the average collection period for MH is likely to be quite high. Fees are generally not collected at all if they are not collected at the time the service is rendered. For purposes of assessing financial position, an average fee collection period of over 90 days (or other period to be determined by management) would mean accounts receivable will not be received and therefore become zero after 90 days. Hiring a fee collector, as well as implementing the recommendations made for improving the accounting and financial information system, should serve to decrease the average period significantly and create a new standard. When setting the standard, it should also be kept in mind that setting the goal too low, such as seven days, could be too restrictive and may deter patients from using the facility in the future (Johnson, 1972).

The **inventory turnover ratio** is the ratio of cost of goods sold to the average inventory. Such a ratio requires that good records be kept on expenditures for medical supplies and pharmaceuticals (including donations and subsidies) and on utilization of inventory. It may be useful at first to

calculate this ratio monthly, until a standard can be set. Currently, it would be difficult to determine this ratio because inventory turnover records are disorganized or unavailable.

4.6.3. Reports

Management may wish to develop several reports that build on information obtained through the balance sheet and ratios as described above. The reports suggested here need not be lengthy or time-consuming; rather, they are meant to formalize the data-gathering process. In addition, they should provide management with useful financial information on which to base decisions.

In addition to the **daily cash report** and **accounts receivable report**, which were described above, a **monthly cash report** and a **monthly inventory turnover report** are recommended. The latter two reports stem from information provided through the ratio analysis described above and therefore should not pose an undue amount of additional work for administration. The purpose of the monthly cash report (see Exhibit 21, below) is to identify and evaluate trends over time (Berman and Weeks, 1982). To be useful, it should be compared with reports in previous months. It allows management to plan better than it could through information provided in a daily cash report because it projects cash balance for the next month.

EXHIBIT 21: SAMPLE MONTHLY CASH REPORT

Lanoff County Hospital
For the Month Ending_____

	Actual	Budget
Beginning Cash Balance	$_____	$_____
Cash Receipts		
Inpatient	$_____	$_____
Outpatient	$_____	$_____
Other Operating	$_____	$_____
Nonoperating	$_____	$_____
Total:	$_____	$_____
Cash Disbursements		
Salaries and Wages	$_____	$_____
Supplies	$_____	$_____
Plant and Equipment	$_____	$_____
Other	$_____	$_____
Total:	$_____	$_____
Ending Cash Balance	$_____	$_____

Projected Cash Balance—Month Ending_____

$_____

Source: Berman and Weeks, 1982.

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The monthly inventory turnover report can be used to assess the way hospital operations are handling stock and inventory (see Exhibit 22, below). It compares the amount of inventory used by each cost center during the present month with prior months and calculates an average that can also be compared. A rather high turnover ratio is a good sign that inventory is being used quickly and wastage is low. A very high turnover ratio may, on the other hand, signify inadequate stock and shortages. A low ratio suggests that inventory is being stockpiled and may indicate wastage of pharmaceuticals. Exactly what level of inventory turnover is appropriate for MH (i.e., the ratio standards) should be assessed once inventory reporting is improved over the next several months.

EXHIBIT 22: SAMPLE MONTHLY INVENTORY TURNOVER REPORT

Lindsay General Hospital

May 31, 1981

| (1) Cost Center | (2) Expected Monthly Usage | Inventory Holdings | | (4) Turnover Rate | | |
		(3A) Current Month	(3B) Last Month	(Col. 2 ÷ Col. 3A) Current Month	Last Month*	Annual Average**
1. Central Supply	25.400	5.000	20.000	5.1	2.7	2.6
2. Dietary	102.700	32.000	45.000	3.2	3.2	3.0
3. Pharmacy	37.800	3.100	5.000	12.2	10.8	9.5
17. Nursing Unit-A	6.500	2.000	4.000	3.2	2.1	1.8

* From last month's report.
** Arithmetic average of turnover rates for the last 12 months.

Source: Berman and Weeks, 1982.

Finally, quarterly break-even projections would be useful for hospital management. Projections may be used to periodically reassess break-even status and guide pricing changes, based on changes in patient volume, costs and subsidies, or other variables. Variable changes may include changes in per capita income, population growth rates, inflation, exchange rates, income and price elasticities, and the number of pharmaceuticals used per patient. Use of the break-even analysis tool and examples of outputs are described elsewhere in this report.

Periodic supervision of the accounts by an external auditor would greatly increase the probability of accurate and timely reporting. For example, this could take the form of monthly supervision for the first six months after adoption of the new financial control procedures, and quarterly thereafter.

In summary, it is suggested that the following monitoring reports and tools be used by hospital management for improving financial control at the hospital:

- Daily (entry sheet) and monthly cash status reports;
- Monthly accounts receivable summary;
- Monthly days of service uncollected;
- Monthly inventory turnover by cost center;
- Quarterly balance sheet with assessment (current ratio, quick ratio, average fee collection period, and inventory turnover);
- Quarterly break-even projections, based on patient volume statistics, cost inventories, and spreadsheet variables;
- Periodic supervisory reports, or audits.

5.0 CONCLUSIONS

This analysis showed that MH has several mechanisms for improving its operations. First, an analysis of service utilization and costs showed that costs per unit of service are high for low-volume services such as surgery and maternity. Increasing patient volume will do much to alleviate this, because fixed costs make up a large percentage of these costs. Second, a break-even analysis showed that service prices were currently set far below costs and also below the point at which the hospital breaks even. Increasing fees an average of 25 percent (excluding surgery, deliveries, and maternity care) could help the hospital break even in six years. Coupling a fee increase with a 100 percent increase in service utilization could allow the hospital to break even in three years, assuming all other variables remain unchanged except that grant income is eliminated. Other changes in the current fee schedule would also help lower the current deficit.

Fee increases will not be enough, however. Hospital management will have to make certain physicians are available at the hospital to see patients. Currently, physicians are not available for much of every week even though they are paid. Patients are not likely to seek curative care services, for which they must pay, unless they receive what they consider quality care. Costs will have to be monitored and inefficiencies reduced. Outside sources of revenue may be required during the first several years, until the hospital breaks even on its own. Hospital management will also have to undertake an active marketing campaign in the Mirebalais area, in order to promote hospital services. It is possible few people know what the hospital offers or how they can benefit from its services. A market survey should also be conducted to assess patients' ability and willingness to pay for curative health services and to gain a better understanding of the population's characteristics and sub-markets.

Several areas within the patient registration, fee collection, and accounting areas need to be improved in order for cost recovery to be successful at Mirebalais Hospital. These include assigning fee collection tasks to specific individuals separate of patient registration responsibilities, improving reporting forms used and the chain of reporting cross-checks, improving patient tracking through a numerical reporting system, instituting accountability for fees collected, and using a one-book accounting system and revised chart of accounts. To improve monitoring and financial control, regular reports on financial status should be utilized. Ultimately, financial and cost control will be as important for the success of cost recovery at MH as improved fee collection and higher patient revenues.

The recommendations made here are many. However, all the suggestions made are feasible and within the hospital management's ability to begin as soon as possible. They can be implemented in phases, based on current workloads and the speed with which a local consultant can be hired to help. In the long run, the time spent on implementation will offer substantial pay-backs. The system will be more streamlined, taking less time to monitor yet providing more information than is currently available for guiding management decisions. Following these suggestions should make cost recovery at Mirebalais Hospital an attainable goal.

APPENDIX A: <u>SCOPE OF WORK</u>

Technical Assistance for the Implementation
of Cost Recovery at Mirebalais Hospital

SCOPE OF WORK

Background

The Child Health Institute (CHI) is a private voluntary organization (PVO), established in 1985, which conducts research and maintains a technical resources center to assist in information dissemination, promotion, monitoring, and evaluation of child survival efforts. One of the service delivery facilities assisted by CHI is Mirebalais Hospital.

In 1989, under the auspices of CHI, Kirsten Frederiksen of the Harvard School of Public Health performed a study to estimate the costs of services provided and evaluate the cost-recovery performance of Mirebalais Hospital. The analysis showed that if prices for the services were to be set at costs, many of the prices likely would be affordable to the population served by Mirebalais. This indicated that financial self-sufficiency is a feasible goal for Mirebalais. However, the analysis of cost-recovery performance showed that prices charged were not in line with costs and that the collection of fees was not strictly enforced. CHI would like to assist the hospital to revise its cost-recovery system to allow it to break even.

The implementation of a revised cost-recovery system requires that additional work be done. There is a desire to promote the use of some services that are under-appreciated by the population (e.g., immunizations, prenatal care). Pricing some services at their costs, particularly inpatient care, would mean a heavy financial burden on users of those services. To be able to attain self-sufficiency while pricing such services below cost would require setting prices higher than costs for other strongly-desired, but less costly services, such as outpatient care and drugs. In addition, the pricing for the cost-recovery system must allow the costs of the community health program to be covered.

Once a pricing system is set, improved administrative mechanisms to implement it must be designed and put into place. These mechanisms include collection, control, and safeguarding of funds; methods for granting exemptions or reductions in payment; and systems to monitor costs, revenues, and utilization.

Finally, a monitoring and evaluation plan should be set up so that prices and administrative mechanisms may be adjusted over time. Adjustments may be needed in prices to keep up with inflation, to compensate for unforeseen changes in utilization, and to ensure self-sufficiency. The pricing of services above and below costs may not result in the desired pattern of utilization, threatening self-sufficiency. Likewise, prices must increase with inflation of costs. Lastly, the exemption system may not adequately ensure access by the poor or require payment by those who are able.

Work to be Performed

To set a schedule of prices for implementation at Mirebalais Hospital, the costs estimation and revenue performance evaluation conducted by Frederiksen must be brought up to date, variations in prices from costs proposed, projections of revenues made, and readjustments in prices made to project break-even status. Using the existing estimates, the costs should be brought up to date, adjusting for changes in salaries, drug prices, etc. Then, adjustments can be made to set prices lower than costs for services that are to be promoted, with compensating increases in prices for other services. Allowance will have to be made for the expected percentage of exemptions from payment. This process will require many iterations to find a set of prices that allows breaking even to be maintained.

Given the set of prices to be applied, a system of collection, financial control, and safeguarding of funds should be established. Methods for systematically identifying who should be exempted from payment must also be established. This will be done by building on current fee-collection and exemption practices. Weaknesses will be identified and options proposed for remedying them. The revision of the current system also will include design of methods to be used to collect financial management information on a regular basis. This information will include the volume of services performed, exemptions granted, costs of services, and revenue received for each unit in the hospital. Model forms for the collection and summary of this information will be designed.

Finally, a plan for monitoring and evaluation of the system will be devised. This plan will include the frequency of financial management reports, frequency and methods for adjustment of prices for changes in input costs, and methods for evaluation and adjustment of the structure of prices and exemptions to allow self-sufficiency to be maintained while promoting certain services and ensuring access to all in the population.

The performance of the analyses will include the presentation of a seminar for the benefit of CHI, USAID, other interested PVO agencies (e.g., CDS and AOPS), and other interested donors (e.g., PAHO, IDB, World Bank, and UNICEF). This seminar will include summaries of the problems addressed, methods, results, and recommendations.

Personnel, Specific Tasks, and Levels of Effort

EXPATRIATE CONSULTANT

Skills: Working knowledge of cost analysis, setting of pricing schedules, and break-even analysis. An understanding of hospital fee collection systems is necessary, including organizational structure, administrative responsibilities, flow of financial information, implementation and monitoring. Ability to work in a team.

Responsibilities: Revising cost estimates, setting pricing schedules and exemptions, projecting revenues and break-even analyses under different scenarios; oversight of evaluation of fee collection and financial information systems and implementation of revised systems; developing a monitoring and evaluation plan for the fee collection system (including frequency of reports and adjustments of cost estimates, prices, exemptions); testing feasibility of methods developed and recommendations made; supervising local consultant.

Products:
- Revised cost estimates
- Pricing schedules (different scenarios)
- Revenue projections (different scenarios)
- Break-even analyses (different scenarios)
- Monitoring and evaluation plan for fee collection and financial information system
- Summary of recommendations
- Presentation of problem, methods, results, and recommendations

Individual Proposed: Kirsten Frederiksen (HFS)

Level of Effort:
21 person-days in-country (or fewer, if progress on tasks allows)
14 days home office

LOCAL CONSULTANT

Skills: Good working knowledge of financial information systems and management and administration of fee collection. Ability to evaluate and modify fee collection and exemption system important. Ability to work in a team also necessary.

Responsibilities: Evaluating current fee collection system, including collection (organization/logistics), financial control, and the safeguarding of funds; establishing mechanism for improved fee collection and identification of exemption eligibility; designing methods for collection of financial management information (including volume of services performed, exemptions granted, service costs, unit revenues); developing forms for collection and summary of information; participating in monitoring and evaluation plan for fee collection and monitoring systems; testing feasibility of methods proposed.

Products:
- Description of current fee collection and financial information systems
- Identification of system weaknesses
- List of options for remedying identified problems and feasibility of each option
- Recommendations for improving fee collection, collection of financial information, and monitoring
- Forms for collection and summary of information
- Presentation of problem, methods, results, and recommendations

Individual Proposed: Local consultant to be identified.

Level of Effort:
25 days in-country (or fewer, if progress on tasks allows)

APPENDIX B: <u>GLOSSARY OF TERMS</u>

AVERAGE COST: Total costs (the sum of total fixed and total variable costs) divided by output or units of service.

BREAK-EVEN POINT: The point at which total expenses or costs equal total income or revenues.

BREAK-EVEN ANALYSIS: An analysis comparing institutional revenues and costs and the amount that revenues deviate from costs. The break-even point, at which revenues equal costs, is calculated to determine the amount of revenues required by the institution or entity to break even financially.

CONSTANT PRICES: Measures the value of output in a given period in the prices of another period. Also known as real prices. This measure attempts to isolate physical output in the economy in different periods by valuing all goods produced in the two periods at the same prices. For example, to measure the value of what today's output would be worth had it been sold in 1980 prices, the value of today's output is multiplied by 1980 prices.

CURRENT PRICES: Measures the value of output in a given period in the prices of that period. Also known as nominal prices.

FIXED COSTS: Costs of providing a service or output that do not change with the number of output units produced. Examples of fixed costs are depreciation of buildings and equipment.

GROSS DOMESTIC PRODUCT: Total annual income, both monetary and non-monetary, for a domestic unit.

INCOME ELASTICITY OF DEMAND: A change in the quantity of a service or product consumed as a result of a change in consumer's money income (Mansfield, 1982). An increase in the consumer's money income may result in increases in the amount of the good consumed. This is usually the case with luxury goods, where the income elasticity is positive.

PRICE ELASTICITY OF DEMAND: The percentage change in quantity demanded resulting from a one percent change in price. The demand for a commodity is said to be price elastic if the elasticity of demand exceeds one. The demand for a commodity is price inelastic if the elasticity of demand is less than one. If price elasticity is greater than one, a price reduction leads to an increase in consumer expenditure on the product.

SCENARIO: A sequence of events when imagined or projected.

VARIABLE COSTS: Costs incurred to produce a variable output or service. Variable costs increase as the rate of production or output increases, such as a rising cost of pharmaceuticals when patient volume increases.

WORKING CAPITAL: Total current assets of the institution or entity. Refers to the sum of the institution's investment in short-term or current assets, such as cash, marketable securities, accounts receivable, and inventories.

APPENDIX C: <u>STEP-DOWN ALLOCATIONS AND ESTIMATED UNIT COSTS</u>

TABLE C.1.1

MIREBALAIS EYE CARE HOSPITAL: ALLOCATION OF LINE ITEM EXPENSE
BY DEPARTMENT (1)

Expense Item (Per Annum)
($1989)

Departments	Personnel	Supplies	Utilities	Equipment	Benefits	Training	Travel	Evaluation	TOTAL
A. Indirect Departments									
1. Administration	$35,490	$4,800	$2,172	$4,899	$27,572	$800	$1,400	$8,000	$85,132
2. Maintenance	$4,500	$19,400							$23,900
3. Laundry	$1,500	$200							$1,700
4. Stock/Supplies	$2,400	$61,487							$63,887
5. Sterilization	$145	$200		$488					$833
6. Nursing	$10,555					$1,000			$11,555
B. Direct Departments									
1. Prenatal Clinic	$7,430			$814					$8,244
2. Pediatric Clinic	$2,085			$33					$2,118
3. Emergency Clinic	$6,500			$49					$6,549
4. Medicine Clinic	$2,085			$49					$2,134
5. Vaccinations	$2,400	$254							$2,654
6. Eye Clinic	$20,520	$5,640		$814					$26,974
7. Maternity Ward	$2,085			$195					$2,280
8. Medicine Ward	$695			$195					$890
9. Pediatric Ward	$695			$163					$858
10. Ophthalmology Ward	$2,725	$1,200		$195					$4,120
11. Surgery	$4,000			$1,627					$5,627
12. Laboratory	$9,600	$9,000		$651					$19,251
13. Pharmacy	$2,400								$2,400
TOTALS	$117,810	$102,181	$2,172	$10,172	$27,572	$1,800	$1,400	$8,000	$271,106

Notes:
(1) Includes items on expense report, as well as other items
    that represent annual costs to the institution.

TABLE C.1.2   (Part 1)

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION

Departments	Direct Expense	Depreciation & Annuitization		Administration		Maintenance	
		Allocation Factor Square Feet	Expense Allocation	Allocation Factor Direct Expense	Expense Allocation	Allocation Factor Square Feet	Expense Allocation
Indirect							
Deprec. & Ann.	$27,603	100.0%	$27,603				
Administration	$85,132	10.0%	$2,760	100.0%	$87,892		
Maintenance	$23,900	2.0%	$552	7.0%	$6,152	100.0%	$30,605
Laundry	$1,700	1.0%	$276	0.5%	$439		
Stock/Supplies	$63,887	10.0%	$2,760	11.0%	$9,668	10.0%	$3,060
Nursing	$11,555	5.0%	$1,380	6.0%	$5,274	5.0%	$1,530
Sterilization	$833	3.0%	$828	0.5%	$439	3.0%	$918
Direct Service							
Prenatal Clinic	$8,244	3.0%	$828	5.0%	$4,395	4.0%	$1,224
Pediatric Clinic	$2,118	3.0%	$828	9.0%	$7,910	6.0%	$1,836
Emergency Clinic	$6,549	3.0%	$828	3.0%	$2,637	4.0%	$1,224
Medicine Clinic	$2,134	3.0%	$828	9.0%	$7,910	6.0%	$1,836
Vaccinations	$2,654	3.0%	$828	3.0%	$2,637	4.0%	$1,224
Ophthalmology Clinic	$26,974	12.0%	$3,312	9.0%	$7,910	15.0%	$4,591
Maternity Ward	$2,280	10.0%	$2,760	6.0%	$5,274	10.0%	$3,060
Medicine Ward	$890	6.0%	$1,656	6.0%	$5,274	5.0%	$1,530
Pediatric Ward	$858	4.0%	$1,104	4.0%	$3,516	4.0%	$1,224
Ophthalmology Ward	$4,120	4.0%	$1,104	6.0%	$5,274	5.0%	$1,530
Surgery	$5,627	6.0%	$1,656	2.0%	$1,758	9.0%	$2,754
Laboratory	$19,251	4.0%	$1,104	4.0%	$3,516	10.0%	$3,060
Pharmacy	$2,400	8.0%	$2,208	9.0%	$7,910		
TOTAL	$296,309		$55,206		$175,785		$61,209

TABLE C.1.3 (Part 2)

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION

Departments	Laundry		Stock & Supplies		Nursing	
	Allocation Factor		Allocation Factor		Allocation Factor	
	Square Feet	Expense Allocation	Patient Visits	Expense Allocation	Patient Visits	Expense Allocation
Indirect						
Deprec. & Ann.						
Administration						
Maintenance						
Laundry	100.0%	$2,415				
Stock/Supplies			100.0%	$79,375		
Nursing					100.0%	$19,739
Sterilization						
Direct Service						
Prenatal Clinic	1.0%	$24	10.0%	$7,938	8.0%	$1,579
Pediatric Clinic	2.0%	$48	2.0%	$1,588	19.0%	$3,750
Emergency Clinic	1.0%	$24	1.0%	$794	4.0%	$790
Medicine Clinic	1.0%	$24	4.0%	$3,175	23.0%	$4,540
Vaccinations					12.0%	$2,369
Ophthalmology Clinic					4.0%	$790
Maternity Ward	27.0%	$652	9.0%	$7,144	5.0%	$987
Medicine Ward			10.0%	$7,938	5.0%	$987
Pediatric Ward	24.0%	$580	8.0%	$6,350	3.0%	$592
Ophthalmology Ward	32.0%	$773	8.0%	$6,350	5.0%	$987
Surgery	12.0%	$290	3.0%	$2,381	2.0%	$395
Laboratory			5.0%	$3,969		
Pharmacy			40.0%	$31,750	10.0%	$1,974
TOTAL		$4,830		$158,750		$39,478

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TABLE C.1.4 (Part 3)

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION

Departments	: Sterilization		TOTAL
	: Allocation : Factor : ---------- : Square Expense : Feet Allocation		

Indirect

Deprec. & Ann.			
Administration			
Maintenance			
Laundry			
Stock/Supplies			
Nursing			
Sterilization	100.0%	$3,018	

Direct Service

Prenatal Clinic	10.0%	$302	$24,534
Pediatric Clinic	19.0%	$573	$18,651
Emergency Clinic	3.0%	$91	$12,937
Medicine Clinic	23.0%	$694	$21,141
Vaccinations	12.0%	$362	$10,074
Ophthalmology Clinic	4.0%	$121	$43,698
Maternity Ward	5.0%	$151	$22,308
Medicine Ward	5.0%	$151	$18,426
Pediatric Ward	6.0%	$181	$14,405
Ophthalmology Ward	5.0%	$151	$20,289
Surgery	8.0%	$241	$15,102
Laboratory			$30,900
Pharmacy			$46,242

| TOTAL | | $6,036 | $298,707 |

TABLE C.1.5

ESTIMATED UNIT COSTS (1)
Mirebalais Hospital, 1989
($H 1989)

SERVICE DEPARTMENT	TOTAL ANNUAL COST	ANNUAL SERVICE VOLUME		AVERAGE COST PER SERVICE UNIT
Prenatal Clinic	$24,534	2,100	Visits	$12
Pediatric Clinic	$18,651	7,200	Visits	$3
Emergency Clinic	$12,937	1,200	Visits	$11
Medicine Clinic	$21,141	8,400	Visits	$3
Vaccinations	$10,074	3,600	Immunizations	$3
Eye Clinic	$43,698	8,400	Visits	$5
Maternity Ward	$22,308	1,080	Patient-Days	$21
Medicine Ward	$18,426	900	Patient-Days	$20
Pediatric Ward	$14,405	900	Patient-Days	$16
Ophthalmology Ward	$20,289	960	Patient-Days	$21
Surgery	$15,102	240	Operations	$63
Laboratory	$30,900	12,000	Tests	$3
Pharmacy	$46,242	27,000	Prescriptions	$1.71

Notes:
(1) Costs include all operating costs to the hospital, including overhead, donations, subsidies. Service costs include drug costs as allocated per department by patient volume (i.e. drugs given without prescription).

TABLE C.2.1

MIREBALAIS EYE CARE HOSPITAL: ALLOCATION OF LINE ITEM EXPENSE
BY DEPARTMENT (1)
(1990)

Expense Item (Per Annum)
($1989 Haitian)

Departments	Personnel	Supplies	Utilities	Equipment	Benefits	Training	Travel	Evaluation	TOTAL
A. Indirect Departments									
1. Administration	$34,955	$2,400	$3,000	$4,899		$800	$1,800	$2,750	$50,604
2. Maintenance	$5,145			$18,000					$23,145
3. Laundry	$1,715	$200							$1,915
4. Stock/Supplies	$2,744	$19,200							$21,944
5. Sterilization	$166	$200		$488					$854
6. Nursing	$19,200					$1,000			$20,200
B. Direct Departments									
1. Prenatal Clinic	$9,604			$814					$10,418
2. Pediatric Clinic	$9,604			$33					$9,637
3. Emergency Clinic	$1,029			$49					$1,078
4. Medicine Clinic	$9,604			$49					$9,653
5. Vaccinations	$2,400	$254		$100					$2,754
6. Eye Clinic	$12,348	$5,640		$814					$18,802
7. Maternity Ward	$5,488			$195					$5,683
8. Medicine Ward	$5,488			$195					$5,683
9. Pediatric Ward	$5,488			$163					$5,651
10. Ophthalmology Ward	$4,116	$1,200		$195					$5,511
11. Surgery	$3,087			$1,627					$4,714
12. Laboratory	$3,000	$1,200		$651					$4,851
13. Pharmacy	$3,000								$3,000
TOTALS	$138,181	$30,294	$3,000	$28,272	$0	$1,800	$1,800	$2,750	$206,097

Notes:
(1) Includes items on expense report, as well as other items
that represent annual costs to the institution.

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TABLE C.2.2

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 1)

Departments	Direct Expense	Depreciation & Annuitization		Administration		Maintenance	
		Allocation Factor — Square Feet	Expense Allocation	Allocation Factor — Direct Expense	Expense Allocation	Allocation Factor — Square Feet	Expense Allocation
Indirect							
Deprec. & Ann.	$6,650	100.0%	$6,650				
Administration	$50,604	10.0%	$665	100.0%	$51,269		
Maintenance	$23,145	2.0%	$133	7.0%	$3,589	100.0%	$26,867
Laundry	$1,915	1.0%	$67	0.5%	$256		
Stock/Supplies	$21,944	10.0%	$665	11.0%	$5,640	10.0%	$2,687
Nursing	$20,200	5.0%	$333	6.0%	$3,076	5.0%	$1,343
Sterilization	$854	3.0%	$200	0.5%	$256	3.0%	$806
Direct Service							
Prenatal Clinic	$10,418	3.0%	$200	5.0%	$2,563	4.0%	$1,075
Pediatric Clinic	$9,637	3.0%	$200	9.0%	$4,614	6.0%	$1,612
Emergency Clinic	$1,078	3.0%	$200	3.0%	$1,538	4.0%	$1,075
Medicine Clinic	$9,653	3.0%	$200	9.0%	$4,614	6.0%	$1,612
Vaccinations	$2,754	3.0%	$200	3.0%	$1,538	4.0%	$1,075
Ophthalmology Clinic	$18,802	12.0%	$798	9.0%	$4,614	15.0%	$4,030
Maternity Ward	$5,683	10.0%	$665	6.0%	$3,076	10.0%	$2,687
Medicine Ward	$5,683	6.0%	$399	6.0%	$3,076	5.0%	$1,343
Pediatric Ward	$5,651	4.0%	$266	4.0%	$2,051	4.0%	$1,075
Ophthalmology Ward	$5,511	4.0%	$266	6.0%	$3,076	5.0%	$1,343
Surgery	$4,714	6.0%	$399	2.0%	$1,025	9.0%	$2,418
Laboratory	$4,851	4.0%	$266	4.0%	$2,051	10.0%	$2,687
Pharmacy	$3,000	8.0%	$532	9.0%	$4,614		
TOTAL	$209,747		$13,300		$102,538		$53,734

TABLE C.2.3

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 2)

Departments	Laundry		Stock & Supplies		Nursing	
	Allocation Factor		Allocation Factor		Allocation Factor	
	Square Feet	Expense Allocation	Patient Visits	Expense Allocation	Patient Visits	Expense Allocation
Indirect						
Deprec. & Ann.						
Administration						
Maintenance						
Laundry	100.0%	$2,238				
Stock/Supplies			100.0%	$30,936		
Nursing					100.0%	$24,952
Sterilization						
Direct Service						
Prenatal Clinic	1.0%	$22	10.0%	$3,094	8.0%	$1,996
Pediatric Clinic	2.0%	$45	2.0%	$619	19.0%	$4,741
Emergency Clinic	1.0%	$22	1.0%	$309	4.0%	$998
Medicine Clinic	1.0%	$22	4.0%	$1,237	23.0%	$5,739
Vaccinations					12.0%	$2,994
Ophthalmology Clinic					4.0%	$998
Maternity Ward	27.0%	$604	9.0%	$2,784	5.0%	$1,248
Medicine Ward			10.0%	$3,094	5.0%	$1,248
Pediatric Ward	24.0%	$537	8.0%	$2,475	3.0%	$749
Ophthalmology Ward	32.0%	$716	8.0%	$2,475	5.0%	$1,248
Surgery	12.0%	$269	3.0%	$928	2.0%	$499
Laboratory			5.0%	$1,547		
Pharmacy			40.0%	$12,374	10.0%	$2,495
TOTAL		$4,476		$61,872		$49,904

TABLE C.2.4

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 3)

Departments	: Sterilization		TOTAL
	: Allocation : Factor		
	: Square : Feet	Expense Allocation	

Indirect

Deprec. & Ann.			
Administration			
Maintenance			
Laundry			
Stock/Supplies			
Nursing			
Sterilization	100.0%	$2,116	

Direct Service

Prenatal Clinic	10.0%	$212	$19,580
Pediatric Clinic	19.0%	$402	$21,870
Emergency Clinic	3.0%	$63	$5,283
Medicine Clinic	23.0%	$487	$23,564
Vaccinations	12.0%	$254	$8,815
Ophthalmology Clinic	4.0%	$85	$29,327
Maternity Ward	5.0%	$106	$16,853
Medicine Ward	5.0%	$106	$14,949
Pediatric Ward	6.0%	$127	$12,931
Ophthalmology Ward	5.0%	$106	$14,741
Surgery	8.0%	$169	$10,252
Laboratory			$11,402
Pharmacy			$23,015

| TOTAL | | $4,232 | $212,582 |

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TABLE C.2.5

ESTIMATED UNIT COSTS (1)
Mirebalais Hospital, 1990
($H 1989)

SERVICE DEPARTMENT	TOTAL ANNUAL COST	ANNUAL SERVICE VOLUME		AVERAGE COST PER SERVICE UNIT
Prenatal Clinic	$19,580	2,448	Visits	$8
Pediatric Clinic	$21,870	5,484	Visits	$4
Emergency Clinic	$5,283	1,140	Visits	$5
Medicine Clinic	$23,564	7,620	Visits	$3
Vaccinations	$8,815	11,124	Immunizations	$1
Eye Clinic	$29,327	6,000	Visits	$5
Maternity Ward	$16,853	504	Patient-Days	$33
Medicine Ward	$14,949	1,920	Patient-Days	$8
Pediatric Ward	$12,931	1,020	Patient-Days	$13
Ophthalmology Ward	$14,747	432	Patient-Days	$34
Surgery	$10,252	120	Operations	$85
Laboratory	$11,402	3,636	Tests	$3
Pharmacy (2)	$23,015	25,000	Prescriptions	$0.92

Notes:

(1) Costs include all operating costs to the hospital,
    inclusive of overhead, donations, subsidies. Service
    costs include drug costs as allocated per department
    by patient volume (i.e. drugs given without prescrip-
    tion).

TABLE C.3.1

MIREBALAIS EYE CARE HOSPITAL: ALLOCATION OF LINE ITEM EXPENSE
BY DEPARTMENT (1) 1989

Expense Item (Per Annum) (2)
($H 1989)

Departments	Personnel	Supplies	Utilities	Equipment	Benefits	Training	Travel	Evaluation	TOTAL
A. Indirect Departments									
1. Administration	$23,660	$4,800	$434	$4,899	$13,786	$0	$0	$500	$48,079
2. Maintenance	$4,500	$19,400							$23,900
3. Laundry	$1,500	$200							$1,700
4. Stock/Supplies	$960	$44,482							$45,442
5. Sterilization	$58	$200		$488					$746
6. Nursing	$4,222					$1,000			$5,222
B. Direct Departments									
1. Prenatal Clinic	$5,498			$814					$6,312
2. Pediatric Clinic	$1,251			$33					$1,284
3. Emergency Clinic	$3,900			$49					$3,949
4. Medicine Clinic	$1,251			$49					$1,300
5. Vaccinations	$1,440	$0							$1,440
6. Eye Clinic	$10,008	$0		$814					$10,822
7. Maternity Ward	$1,251			$195					$1,446
8. Medicine Ward	$417			$195					$612
9. Pediatric Ward	$417			$163					$580
10. Ophthalmology Ward	$2,725	$1,200		$195					$4,120
11. Surgery	$2,400			$1,627					$4,027
12. Laboratory	$4,800	$5,400		$651					$10,851
13. Pharmacy	$2,400								$2,400
TOTALS	$72,658	$75,682	$434	$10,172	$13,786	$1,000	$0	$500	$174,232

Notes:
(1) Includes items on expense report, as well as other items representing annual costs
    to the institution, but EXCLUDES subsidies and donations.
(2) In 1989, $US 1 = $H 1. In 1990, $US 0.66 = $H 1.

TABLE C.3.2

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 1) 1989 PVO Costs

Departments	Direct Expense	Depreciation & Annuitization — Square Feet	Depreciation & Annuitization — Expense Allocation	Administration — Direct Expense	Administration — Expense Allocation	Maintenance — Square Feet	Maintenance — Expense Allocation
Indirect							
Deprec. & Ann.	$27,603	100.0%	$27,603				
Administration	$48,079	10.0%	$2,760	100.0%	$50,839		
Maintenance	$23,900	2.0%	$552	7.0%	$3,559	100.0%	$28,011
Laundry	$1,700	1.0%	$276	0.5%	$254		
Stock/Supplies	$45,442	10.0%	$2,760	11.0%	$5,592	10.0%	$2,801
Nursing	$5,222	5.0%	$1,380	6.0%	$3,050	5.0%	$1,401
Sterilization	$746	3.0%	$828	0.5%	$254	3.0%	$840
Direct Service							
Prenatal Clinic	$6,312	3.0%	$828	5.0%	$2,542	4.0%	$1,120
Pediatric Clinic	$1,284	3.0%	$828	9.0%	$4,576	6.0%	$1,681
Emergency Clinic	$3,949	3.0%	$828	3.0%	$1,525	4.0%	$1,120
Medicine Clinic	$1,300	3.0%	$828	9.0%	$4,576	6.0%	$1,681
Vaccinations	$1,440	3.0%	$828	3.0%	$1,525	4.0%	$1,120
Ophthalmology Clinic	$10,822	12.0%	$3,312	9.0%	$4,576	15.0%	$4,202
Maternity Ward	$1,446	10.0%	$2,760	6.0%	$3,050	10.0%	$2,801
Medicine Ward	$612	6.0%	$1,656	6.0%	$3,050	5.0%	$1,401
Pediatric Ward	$580	4.0%	$1,104	4.0%	$2,034	4.0%	$1,120
Ophthalmology Ward	$4,120	4.0%	$1,104	6.0%	$3,050	5.0%	$1,401
Surgery	$4,027	6.0%	$1,656	2.0%	$1,017	9.0%	$2,521
Laboratory	$10,851	4.0%	$1,104	4.0%	$2,034	10.0%	$2,801
Pharmacy	$2,400	8.0%	$2,208	9.0%	$4,576		
TOTAL	$199,435		$55,206		$101,679		$56,022

TABLE C.3.3

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 2) 1989 PVO Costs

Departments	Laundry		Stock & Supplies		Nursing	
	Allocation Factor		Allocation Factor		Allocation Factor	
	Square Feet	Expense Allocation	Patient Visits	Expense Allocation	Patient Visits	Expense Allocation
Indirect						
Deprec. & Ann.						
Administration						
Maintenance						
Laundry	100.0%	$2,230				
Stock/Supplies			100.0%	$56,595		
Nursing					100.0%	$11,053
Sterilization						
Direct Service						
Prenatal Clinic	1.0%	$22	10.0%	$5,660	8.0%	$884
Pediatric Clinic	2.0%	$45	2.0%	$1,132	19.0%	$2,100
Emergency Clinic	1.0%	$22	1.0%	$566	4.0%	$442
Medicine Clinic	1.0%	$22	4.0%	$2,264	23.0%	$2,542
Vaccinations					12.0%	$1,326
Ophthalmology Clinic					4.0%	$442
Maternity Ward	27.0%	$602	9.0%	$5,094	5.0%	$553
Medicine Ward			10.0%	$5,660	5.0%	$553
Pediatric Ward	24.0%	$535	8.0%	$4,528	3.0%	$332
Ophthalmology Ward	32.0%	$714	8.0%	$4,528	5.0%	$553
Surgery	12.0%	$268	·3.0%	$1,698	2.0%	$221
Laboratory			5.0%	$2,830		
Pharmacy			40.0%	$22,638	10.0%	$1,105
TOTAL		$4,460		$113,190		$22,106

TABLE C.3.4

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 3) 1989 PVO Costs

			TOTAL
	: Sterilization		
	: Allocation		
	: Factor		
	: ----------		
	: Square	Expense	
Departments	: Feet	Allocation	

Indirect

Deprec. & Ann.
Administration
Maintenance
Laundry
Stock/Supplies
Nursing

Sterilization	100.0%	$2,668	

Direct Service

Prenatal Clinic	10.0%	$267	$17,635
Pediatric Clinic	19.0%	$507	$12,153
Emergency Clinic	3.0%	$80	$8,532
Medicine Clinic	23.0%	$614	$13,827
Vaccinations	12.0%	$320	$6,559
Ophthalmology Clinic	4.0%	$107	$23,461
Maternity Ward	5.0%	$133	$16,439
Medicine Ward	5.0%	$133	$13,065
Pediatric Ward	6.0%	$160	$10,393
Ophthalmology Ward	5.0%	$133	$15,603
Surgery	8.0%	$213	$11,621
Laboratory			$19,620
Pharmacy			$32,927

TOTAL		$5,336	$201,836

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TABLE C.4.1

MIREBALAIS EYE CARE HOSPITAL: ALLOCATION OF LINE ITEM EXPENSE
BY DEPARTMENT (1) 1990

Expense Item (Per Annum)
($H 1989)

Departments	Personnel	Supplies	Utilities	Equipment	Benefits	Training	Travel	Evaluation	TOTAL
A. Indirect Departments									
1. Administration	$23,660	$2,400	$600	$4,899		$800	$1,800	$2,750	$36,909
2. Maintenance	$4,500			$18,000					$22,500
3. Laundry	$1,715	$200							$1,915
4. Stock/Supplies	$960	$19,200							$20,160
5. Sterilization	$58	$200		$488					$746
6. Nursing	$4,222					$1,000			$5,222
B. Direct Departments									
1. Prenatal Clinic	$5,762			$814					$6,576
2. Pediatric Clinic	$5,762			$33					$5,795
3. Emergency Clinic	$617			$49					$666
4. Medicine Clinic	$5,762			$49					$5,811
5. Vaccinations	$960	$254		$100					$1,314
6. Eye Clinic	$7,409	$5,640		$814					$13,863
7. Maternity Ward	$3,293			$195					$3,488
8. Medicine Ward	$3,293			$195					$3,488
9. Pediatric Ward	$3,293			$163					$3,456
10. Ophthalmology Ward	$2,470	$0		$195					$2,665
11. Surgery	$1,852			$1,627					$3,480
12. Laboratory	$1,500	$1,200		$651					$3,351
13. Pharmacy	$3,000								$3,000
TOTALS	$80,089	$29,094	$600	$28,272	$0	$1,800	$1,800	$2,750	$144,405

Notes:
(1) Includes items on expense report, as well as other items representing annual costs
    annual costs to the institution, but EXCLUDES subsidies and donations.
(2) In 1989, $US 1 = $H 1. In 1990, $US 0.66 = $H 1.

TABLE C.4.2

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 1) 1990 PVO Costs

Departments	Direct Expense	Depreciation & Annuitization		Administration		Maintenance	
		Allocation Factor Square Feet	Expense Allocation	Allocation Factor Direct Expense	Expense Allocation	Allocation Factor Square Feet	Expense Allocation
Indirect							
Deprec. & Ann.	$6,650	100.0%	$6,650				
Administration	$36,909	10.0%	$665	100.0%	$37,574		
Maintenance	$22,500	2.0%	$133	7.0%	$2,630	100.0%	$25,263
Laundry	$1,915	1.0%	$67	0.5%	$188		
Stock/Supplies	$20,160	10.0%	$665	11.0%	$4,133	10.0%	$2,526
Nursing	$5,222	5.0%	$333	6.0%	$2,254	5.0%	$1,263
Sterilization	$746	3.0%	$200	0.5%	$188	3.0%	$758
Direct Service							
Prenatal Clinic	$6,576	3.0%	$200	5.0%	$1,879	4.0%	$1,011
Pediatric Clinic	$5,795	3.0%	$200	9.0%	$3,382	6.0%	$1,516
Emergency Clinic	$666	3.0%	$200	3.0%	$1,127	4.0%	$1,011
Medicine Clinic	$5,811	3.0%	$200	9.0%	$3,382	6.0%	$1,516
Vaccinations	$1,314	3.0%	$200	3.0%	$1,127	4.0%	$1,011
Ophthalmology Clinic	$13,863	12.0%	$798	9.0%	$3,382	15.0%	$3,789
Maternity Ward	$3,488	10.0%	$665	6.0%	$2,254	10.0%	$2,526
Medicine Ward	$3,488	6.0%	$399	6.0%	$2,254	5.0%	$1,263
Pediatric Ward	$3,456	4.0%	$266	4.0%	$1,503	4.0%	$1,011
Ophthalmology Ward	$2,665	4.0%	$266	6.0%	$2,254	5.0%	$1,263
Surgery	$3,480	6.0%	$399	2.0%	$751	9.0%	$2,274
Laboratory	$3,351	4.0%	$266	4.0%	$1,503	10.0%	$2,526
Pharmacy	$3,000	8.0%	$532	9.0%	$3,382		
TOTAL	$148,055		$13,300		$75,148		$50,526

TABLE C.4.3

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 2) 1990 PVO Costs

Departments	Laundry		Stock & Supplies		Nursing	
	Allocation Factor		Allocation Factor		Allocation Factor	
	Square Feet	Expense Allocation	Patient Visits	Expense Allocation	Patient Visits	Expense Allocation
Indirect						
Deprec. & Ann.						
Administration						
Maintenance						
Laundry	100.0%	$2,170				
Stock/Supplies			100.0%	$27,484		
Nursing					100.0%	$9,072
Sterilization						
Direct Service						
Prenatal Clinic	1.0%	$22	10.0%	$2,748	8.0%	$726
Pediatric Clinic	2.0%	$43	2.0%	$550	19.0%	$1,724
Emergency Clinic	1.0%	$22	1.0%	$275	4.0%	$363
Medicine Clinic	1.0%	$22	4.0%	$1,099	23.0%	$2,087
Vaccinations					12.0%	$1,089
Ophthalmology Clinic					4.0%	$363
Maternity Ward	27.0%	$586	9.0%	$2,474	5.0%	$454
Medicine Ward			10.0%	$2,748	5.0%	$454
Pediatric Ward	24.0%	$521	8.0%	$2,199	3.0%	$272
Ophthalmology Ward	32.0%	$694	8.0%	$2,199	5.0%	$454
Surgery	12.0%	$260	3.0%	$825	2.0%	$181
Laboratory			5.0%	$1,374		
Pharmacy			40.0%	$10,994	10.0%	$907
TOTAL		$4,340		$54,968		$18,144

TABLE C.4.4

MIREBALAIS HOSPITAL: STEPDOWN ALLOCATION
(Part 3) 1990 PVO Costs

Departments	Sterilization Allocation Factor Square Feet	Expense Allocation	TOTAL
Indirect			
Deprec. & Ann.			
Administration			
Maintenance			
Laundry			
Stock/Supplies			
Nursing			
Sterilization	100.0%	$1,892	
Direct Service			
Prenatal Clinic	10.0%	$189	$13,351
Pediatric Clinic	19.0%	$359	$13,569
Emergency Clinic	3.0%	$57	$3,721
Medicine Clinic	23.0%	$435	$14,552
Vaccinations	12.0%	$227	$4,968
Ophthalmology Clinic	4.0%	$76	$22,280
Maternity Ward	5.0%	$95	$12,542
Medicine Ward	5.0%	$95	$10,701
Pediatric Ward	6.0%	$114	$9,342
Ophthalmology Ward	5.0%	$95	$9,890
Surgery	8.0%	$151	$8,321
Laboratory			$9,020
Pharmacy			$18,815
TOTAL		$3,784	$151,072

APPENDIX D: <u>BREAK-EVEN SPREADSHEET AND INSTRUCTIONS</u>

DESCRIPTION OF BREAK-EVEN SPREADSHEET

The spreadsheet described here was developed for the management of Eye Care MARCH's Mirebalais Hospital, to allow setting of service prices and determination of break-even status. The spreadsheet also allows scenarios to be tested, based upon changes in key variables and assumptions that affect the hospital's ability to break even. The spreadsheet can easily be adapted to other health facilities charging for services and aiming toward self-sufficiency.

In order for the user to better understand and use the spreadsheet, a guide is provided here. First, the components of the spreadsheet are described, then assumptions and how they are used in the model are explained. Finally, a summary of variables that can be changed by the user, based upon different assumptions and situations, is given. Examples of the spreadsheet output are provided in Appendix E.

MAJOR COMPONENTS OF THE SPREADSHEET

This easy-to-use spreadsheet, modeled on Lotus 1-2-3 R, is divided into two major sections: revenues and costs. The section that calculates monthly revenues includes columns where prices per service can be input, along with volume per service and fee collection rate per service. Service volume in absolute numbers is input by the user in a column to the right of the actual spreadsheet that appears on the first screen (column j). The spreadsheet automatically calculates the percent of service volume by type of service (column e on the first screen), so the user can see the proportion of visits by service. Patient revenues are calculated by service, based upon input prices times quantities of patients (percent of total patient visits) times the rates of fee collection. [Other variables also enter into the final calculation of revenues, such as income and price elasticities of demand, which are described below in further detail.] Other types of revenue (in this case, grant revenue) can also be entered in the row below patient revenue. Total monthly revenue is calculated by the spreadsheet at the bottom of the revenue table.

The section that calculates monthly costs (the second table) is divided into fixed and variable costs. Fixed costs by cost category are calculated based on input unit costs times the quantities of units, minus subsidies. In this model, fixed costs do not change with patient volume. Variable costs are calculated by the spreadsheet based upon input unit costs per patient times the quantities of patients, minus subsidies. Unit costs, quantity, and the amount of subsidy (percent) are input by the user in three separate columns.

Near the bottom of the spreadsheet, under the cost section, the break-even point is shown in a box. Revenues and costs calculated in other sections of the spreadsheet feed into the final calculation of break-even status. The break-even point is calculated automatically by subtracting total monthly revenues from total monthly costs to determine the revenue still required by the hospital to

break even. Ultimately, all calculations that the spreadsheet makes lead to changes in the break-even point, which is highlighted by a box. Listed at the end of the spreadsheet is a set of assumptions that feed into the tables and calculations. These assumptions are variables that can be changed for different situations, and are described below.

ASSUMPTIONS/VARIABLES

Assumptions used in the model include those listed at the bottom of the spreadsheet such as population growth rate, per capita income, income elasticity of demand, price elasticity of demand, pharmaceutical wastage, exchange rate, inflation rate, and year. Each assumption is automatically factored into the calculation of the final revenue and cost estimates, as the users change their assumptions and therefore these variables.

For example, the population growth rate is assumed here to be 2.2 per 1,000. In year 2 (1991 here), the original population increases by 2.2 per 1,000 and the new number of patient visits is automatically calculated. The new number of patient visits is based on the input patient volume per service for the base year, increased by the additional number of patients likely to seek services given the increase in the catchment population. Total patient volume therefore affects final patient revenue by changing patient volume in column k. Total patient visits is also used to calculate variable costs, the costs per unit of service times the number of units. Thus, population growth rates affect the calculation of total costs.

Per capita GDP, along with the income elasticity of demand, has been entered into the spreadsheet because a change in per capita GDP can affect the utilization of services. In this spreadsheet, a base per capita GDP of $350 is used. If the variable is changed by the user such that GDP is not equal to $350, the total patient visits per month will change automatically based on the income elasticity of demand (the percentage change in demand per percentage change in income) input by the user. The third column (1) to the right of the revenue section (off the first screen) calculates this change automatically based on the original patient volume, per capita GDP, and income elasticity. Generally, for private curative services, if income increases, so will the demand for medical care. For this population, however, the true income elasticity of demand is not known, so estimates from low-income African countries are used (0.887).

The price elasticity of demand (the percentage change in demand per percentage change in price) is also used in the spreadsheet's calculations. An elasticity of -.2 is used here. A change in price will change demand, thus changing the total number of patient visits per month and subsequently the revenue. The fourth column on the right (m) automatically calculates patient volume based on input price elasticities and price changes. Patient volume changes are assumed to be affected equally by price changes across all services in this spreadsheet (for lack of data to the contrary for this population). Based on the price elasticity, only a certain change in price will be allowed before the provider starts to see a fall in revenue. If prices are raised beyond

a certain point (the point being dependent upon the price elasticity used), one can see demand decline, offsetting any gains in revenue due to the higher prices used. For example, raising prices for inpatient ophthalmology services beyond $16 per visit changes the patient volume and decreases revenues. Generally speaking, higher prices for curative care tend to lower demand for such services. Price elasticities of demand were used from other countries because data is unavailable for this population.

Other assumptions used in the model include the level of pharmaceutical wastage and exchange rates (the spreadsheet considers these in its calculations of total drug costs under variable costs, and inflation (considered in all cost calculations). Within the tables themselves, fee collection rates (in the revenue table) and subsidy levels (in the cost table) can be changed by the user, as discussed previously.

SUMMARY OF VARIABLES THAT CAN BE CHANGED

By definition, assumptions can be changed. Thus, the assumptions that are described above can be varied based upon the situation in which the hospital and its catchment population find themselves. For example, a decline in income would be entered because it will affect utilization of hospital services. To aid the user, the following is a summary of the variables that can be changed:

- population growth rate (cell b4)
- per capita GDP (cell b96)
- income elasticity of demand (cell b98)
- price elasticity of demand (cell b100)
- pharmaceutical wastage (b104)
- exchange rate (b110)
- inflation rate (b102)
- current year (b92)
- percent fee collected by service (column f)
- service prices (column d)
- unit costs (column d)
- quantity of units (for *fixed* cost estimates) (column e)
- percent cost subsidy (column f)
- patient volume (column j).

Please note that items not listed should not be changed in the spreadsheet, because it will change the way the model is calculated.

Formulas for each cell are attached.

```
C1:  'MIREBALAIS HOSPITAL
C2:  'BREAK-EVEN ANALYSIS
C3:  '(Current $Haitian)
E5:  [W14] 'Year
F5:  [W11] +B92
E6:  [W14] \-
F6:  [W11] \-
E7:  [W14] '|Patient Visits
G7:  '|
E8:  [W14] '|Per Month:
F8:  (,0) [W11] @IF(M35=0,J35,M35)
G8:  '|
E9:  [W14] \-
F9:  [W11] \-
A10: 'MONTHLY REVENUES
A11: \-
F11: [W11] 'FEE
J11: 'enter no.
A12: 'SERVICES
D12: [W11] '    PRICE
E12: [W14] '   QUANTITY
F12: [W11] 'COLLECTED
G12: 'REVENUE
J12: 'of visits
K12: '    pop
L12: '      Y
A13: \-
B13: \-
C13: \-
D13: [W11] \-
E13: [W14] \-
F13: [W11] \-
G13: \-
A14: 'Inpatient Ophthalmology
D14: (C2) [W11] 5
E14: (P1) [W14] +J14/$J$35
F14: (P0) [W11] 0.9
G14: (C0) @IF(M14=0,(J14*D14*F14),(M14*D14*F14))
J14: 9
K14: +J14*((1+$B$94)^($B$92-1))
L14: (,0) (1+((($B$96-350)/350)*$B$98))*K14
A15: 'Inpatient Medicine
D15: (C2) [W11] 5
E15: (P1) [W14] +J15/$J$35
F15: (P0) [W11] 0.9
G15: (C0) @IF(M15=0,(J15*D15*F15),(M15*D15*F15))
J15: 40
K15: +J15*((1+$B$94)^($B$92-1))
L15: (,0) (((($B$96-350)/350)*$B$98)+1)*K15
A16: 'Inpatient Pediatric
D16: (C2) [W11] 5
E16: (P1) [W14] +J16/$J$35
F16: (P0) [W11] 0.9
G16: (C0) @IF(M16=0,(J16*D16*F16),(M16*D16*F16))
J16: 17
K16: +J16*((1+$B$94)^($B$92-1))
L16: (,0) (((($B$96-350)/350)*$B$98)+1)*K16
A17: 'Inpatient Maternity
D17: (C2) [W11] 5
E17: (P1) [W14] +J17/$J$35
F17: (P0) [W11] 0.9
G17: (C0) @IF(M17=0,(J17*D17*F17),(M17*D17*F17))
J17: 9
K17: +J17*((1+$B$94)^($B$92-1))
L17: (,0) (((($B$96-350)/350)*$B$98)+1)*K17
A18: 'C-section
D18: (C2) [W11] 70
E18: (P1) [W14] +J18/$J$35
F18: (P0) [W11] 0.9
G18: (C0) @IF(M18=0,(J18*D18*F18),(M18*D18*F18))
J18: 5

K18: +J18*((1+$B$94)^($B$92-1))
L18: (,0) (((($B$96-350)/350)*$B$98)+1)*K18
A19: 'Outpatient (new adult)
D19: (C2) [W11] 1
E19: (P1) [W14] +J19/$J$35
F19: (P0) [W11] 0.9
G19: (C0) @IF(M19=0,(J19*D19*F19),(M19*D19*F19))
J19: 375
K19: +J19*((1+$B$94)^($B$92-1))
L19: (,0) (((($B$96-350)/350)*$B$98)+1)*K19
A20: 'Outpatient (new prenatal)
D20: (C2) [W11] 1
E20: (P1) [W14] +J20/$J$35
F20: (P0) [W11] 0.9
G20: (C0) @IF(M20=0,(J20*D20*F20),(M20*D20*F20))
J20: 122
K20: +J20*((1+$B$94)^($B$92-1))
L20: (,0) (((($B$96-350)/350)*$B$98)+1)*K20
A21: 'Outpatient (new pedi)
D21: (C2) [W11] 1
E21: (P1) [W14] +J21/$J$35
F21: (P0) [W11] 0.9
G21: (C0) @IF(M21=0,(J21*D21*F21),(M21*D21*F21))
J21: 297
K21: +J21*((1+$B$94)^($B$92-1))
L21: (,0) (((($B$96-350)/350)*$B$98)+1)*K21
A22: 'Outpatient (rev.adult)
D22: (C2) [W11] 0.6
E22: (P1) [W14] +J22/$J$35
F22: (P0) [W11] 0.9
G22: (C0) @IF(M22=0,(J22*D22*F22),(M22*D22*F22))
J22: 260
K22: +J22*((1+$B$94)^($B$92-1))
L22: (,0) (((($B$96-350)/350)*$B$98)+1)*K22
A23: 'Outpatient (rev. prenatal)
D23: (C2) [W11] 0.6
E23: (P1) [W14] +J23/$J$35
F23: (P0) [W11] 0.9
G23: (C0) @IF(M23=0,(J23*D23*F23),(M23*D23*F23))
J23: 82
K23: +J23*((1+$B$94)^($B$92-1))
L23: (,0) (((($B$96-350)/350)*$B$98)+1)*K23
A24: 'Outpatient (rev. pedi)
D24: (C2) [W11] 0.6
E24: (P1) [W14] +J24/$J$35
F24: (P0) [W11] 0.9
G24: (C0) @IF(M24=0,(J24*D24*F24),(M24*D24*F24))
J24: 160
K24: +J24*((1+$B$94)^($B$92-1))
L24: (,0) (((($B$96-350)/350)*$B$98)+1)*K24
A25: 'Outpatient (ophthalmo)
D25: (C2) [W11] 1
E25: (P1) [W14] +J25/$J$35
F25: (P0) [W11] 0.9
G25: (C0) @IF(M25=0,(J25*D25*F25),(M25*D25*F25))
J25: 500
K25: +J25*((1+$B$94)^($B$92-1))
L25: (,0) (((($B$96-350)/350)*$B$98)+1)*K25
A26: 'Surgery
D26: (C2) [W11] 70
E26: (P1) [W14] +J26/$J$35
F26: (P0) [W11] 0.9
G26: (C0) @IF(M26=0,(J26*D26*F26),(M26*D26*F26))
J26: 8
K26: +J26*((1+$B$94)^($B$92-1))
L26: (,0) (((($B$96-350)/350)*$B$98)+1)*K26
A27: 'Surgery (ophthalmo)
D27: (C0) [W11] 200
E27: (P1) [W14] +J27/$J$35
F27: (P0) [W11] 0.9
G27: (C0) @IF(M27=0,(J27*D27*F27),(M27*D27*F27))
J27: 2
```

```
K27: +J27*((1+$B$94)^($B$92-1))
L27: (,0) (((($B$96-350)/350)*$B$98)+1)*K27
A28: 'Emergency
D28: (C2) [W11] 2
E28: (P1) [W14] +J28/$J$35
F28: (P0) [W11] 0.9
G28: (C0) @IF(M28=0,(J28*D28*F28),(M28*D28*F28))
J28: 95
K28: +J28*((1+$B$94)^($B$92-1))
L28: (,0) (((($B$96-350)/350)*$B$98)+1)*K28
A29: 'Injections
D29: (C2) [W11] 2
E29: (P1) [W14] +J29/$J$35
F29: (P0) [W11] 0.9
G29: (C0) @IF(M29=0,(J29*D29*F29),(M29*D29*F29))
J29: 547
K29: +J29*((1+$B$94)^($B$92-1))
L29: (,0) (((($B$96-350)/350)*$B$98)+1)*K29
A30: 'Laboratory
D30: (C2) [W11] 0.8
E30: (P1) [W14] +J30/$J$35
F30: (P0) [W11] 0.9
G30: (C0) @IF(M30=0,(J30*D30*F30),(M30*D30*F30))
J30: 303
K30: +J30*((1+$B$94)^($B$92-1))
L30: (,0) (((($B$96-350)/350)*$B$98)+1)*K30
A31: 'Pharmacy Outpatient
D31: (C2) [W11] 1.5
E31: (P1) [W14] +J31/$J$35
F31: (P0) [W11] 0.9
G31: (C0) @IF(M31=0,(J31*D31*F31),(M31*D31*F31))
J31: 900
K31: +J31*((1+$B$94)^($B$92-1))
L31: (,0) (((($B$96-350)/350)*$B$98)+1)*K31
A32: 'Pharmacy Emergency
D32: (C2) [W11] 6
E32: (P1) [W14] +J32/$J$35
F32: (P0) [W11] 0.9
G32: (C0) @IF(M32=0,(J32*D32*F32),(M32*D32*F32))
J32: 70
K32: +J32*((1+$B$94)^($B$92-1))
L32: (,0) (((($B$96-350)/350)*$B$98)+1)*K32
A33: 'Vaccinations
D33: (C2) [W11] 0
E33: (P1) [W14] +J33/$J$35
F33: (P0) [W11] 0.9
G33: (C0) @IF(M33=0,(J33*D33*F33),(M33*D33*F33))
J33: 927
K33: +J33*((1+$B$94)^($B$92-1))
L33: (,0) (((($B$96-350)/350)*$B$98)+1)*K33
G34: \-
A35: 'SUBTOTAL-PATIENT REVENUES
G35: (C0) @SUM(G14..G33)

H35: (P0) (G35/G39)
J35: @SUM(J14..J29)
K35: @SUM(K14..K29)
L35: @SUM(L14..L29)
A37: 'Estimated Grant Income
G37: (C0) 6500

H37: (P0) (G37/G39)
A38: \-
B38: \-
C38: \-
D38: [W11] \-
E38: [W14] \-
F38: [W11] \-
G38: (C0) \-
A39: 'TOTAL REVENUES PER MONTH
G39: (C0) +G35+G37
H39: (P0) +H35+H37
G40: ======= ..
```

```
A42: '(a)  Quantity is percentage of monthly patient visits.
A43: '     Patients may receive more than one service.
A48: 'MONTHLY COSTS
D48: [W11] 'UNIT COST
E48: [W14] '    QUANTITY
F48: [W11] '    SUBSIDY
G48: '    TOTAL
A49: \-
B49: \-
C49: \-
D49: [W11] \-
E49: [W14] \-
F49: [W11] \-
G49: \-
A50: 'FIXED RECURRENT
A51: 'Salaries
A52: '   Hospital Manager
D52: (C0) [W11] 1400
E52: [W14] 1
F52: (P0) [W11] 0
G52: (C0) ((D52*E52)-(D52*E52*F52))*(1+$B$102)
A53: '   Accountant
D53: (C0) [W11] 300
E53: [W14] 1
F53: (P0) [W11] 0
G53: (C0) ((D53*E53)-(D53*E53*F53))*(1+$B$102)
A54: '   Physicians
D54: (C0) [W11] 1200
E54: [W14] 4
F54: (P0) [W11] 0.4
G54: (C0) ((D54*E54)-(D54*E54*F54))*(1+$B$102)
A55: '   Nurses
D55: (C0) [W11] 400
E55: [W14] 4
F55: (P0) [W11] 0.6
G55: (C0) ((D55*E55)-(D55*E55*F55))*(1+$B$102)
A56: '   Lab technician
D56: (C0) [W11] 250
E56: [W14] 1
F56: (P0) [W11] 0.5
G56: (C0) ((D56*E56)-(D56*E56*F56))*(1+$B$102)
A57: '   Pharmacist
D57: (C0) [W11] 250
E57: [W14] 1

F57: (P0) [W11] 0
G57: (C0) ((D57*E57)-(D57*E57*F57))*(1+$B$102)
A58: '   Cashier
D58: (C0) [W11] 250
E58: [W14] 1
F58: (P0) [W11] 0.5
G58: (C0) ((D58*E58)-(D58*E58*F58))*(1+$B$102)
A59: '   Secretary
D59: (C0) [W11] 325
E59: [W14] 1
F59: (P0) [W11] 0
G59: (C0) ((D59*E59)-(D59*E59*F59))*(1+$B$102)
A60: '   Auxiliary staff
D60: (C0) [W11] 250
E60: [W14] 2
F60: (P0) [W11] 0.55
G60: (C0) ((D60*E60)-(D60*E60*F60))*(1+$B$102)
A61: '   Driver
D61: (C0) [W11] 250
E61: [W14] 1
F61: (P0) [W11] 0
G61: (C0) ((D61*E61)-(D61*E61*F61))*(1+$B$102)
A62: 'Insurance
D62: (C0) [W11] (@SUM(D52..D61))*0.06
E62: [W14] 1
F62: (P0) [W11] 0
G62: (C0) ((D62*E62)-(D62*E62*F62))*(1+$B$102)
A63: 'Bonuses
```

```
D63:  (C0) [W11] (@SUM(D53..D62))/12                              D81:  [W11] \-
E63:  [W14] 1                                                     E81:  [W14] \-
F63:  (P0) [W11] 0                                                F81:  [W11] \-
G63:  (C0) ((D63*E63)-(D63*E63*F63))*(1+$B$102)                   G81:  \-
A64:  Depreciation                                                A82:  'TOTAL COSTS PER MONTH
D64:  (C0) [W11] 554                                              G82:  (C0) +G73+G80
E64:  [W14] 1                                                     G83:  ========
F64:  (P0) [W11] 0                                                A85:  '      ----
G64:  (C0) ((D64*E64)-(D64*E64*F64))*(1+$B$102)                   B85:  \-
A65:  Vehicle                                                     C85:  \-
D65:  (C0) [W11] 1500                                             D85:  [W11] \-
E65:  [W14] 1                                                     E85:  [W14] \-
F65:  (P0) [W11] 0                                                F85:  [W11] \-
G65:  (C0) ((D65*E65)-(D65*E65*F65))*(1+$B$102)                   A86:        ----
A66:  Furniture                                                   B86:  \-
D66:  (C0) [W11] 0                                                C86:  \-
E66:  [W14] 1                                                     D86:  [W11] \-
F66:  (P0) [W11] 0                                                E86:  [W14] \-
G66:  (C0) ((D66*E66)-(D66*E66*F66))*(1+$B$102)                   F86:  [W11] \-
A67:  Per diem                                                    A87:  '     | BREAK-EVEN:
D67:  (C0) [W11] 150                                              E87:  (C0) [W14] +G39-G82
E67:  [W14] 2                                                     G87:  .|
F67:  (P0) [W11] 0                                                A88:  .    |
G67:  (C0) ((D67*E67)-(D67*E67*F67))*(1+$B$102)                   G88:  .|
A68:  Office supplies                                             A89:  .        |.
D68:  (C0) [W11] 200                                              E89:  [W14]  '         Surplus/(Deficit)
E68:  [W14] 1                                                     G89:  .|
F68:  (P0) [W11] 0                                                A90:  \-
G68:  (C0) ((D68*E68)-(D68*E68*F68))*(1+$B$102)                   B90:  \-
A69:  Utilities                                                   C90:  \-
D69:  (C0) [W11] 250                                              D90:  [W11] \-
E69:  [W14] 1                                                     E90:  [W14] \-
F69:  (P0) [W11] 0.8                                              F90:  [W11] \-
G69:  (C0) ((D69*E69)-(D69*E69*F69))*(1+$B$102)                   G90:  \-
A70:  Administration                                              A91:  'ASSUMPTIONS:
D70:  (C0) [W11] 400                                              B92:  1
E70:  [W14] 1                                                     C92:  'Year Number (Year 1 = 1990)
F70:  (P0) [W11] 0                                                I93:  '(do not change this column)
G70:  (C0) ((D70*E70)-(D70*E70*F70))*(1+$B$102)                   B94:  0.022
A71:  Eye Care MARCH                                              C94:  'Population Growth Rate
D71:  (C0) [W11] 22029                                            I94:  110000
E71:  [W14] 1                                                     J94:  'Population - Year 1
F71:  (P0) [W11] 1                                                I95:  +I94*((1+B94)^(F5-1))
G71:  (C0) ((D71*E71)-(D71*E71*F71))*(1+$B$102)                   J95:  'Population - Current Year
G72:  \-                                                          B96:  350
B73:  'Subtotal Fixed Recurrent                                   C96:  'GDP Per Capita ($350 = base)
G73:  (C0) @SUM(G52..G70)                                         I96:  (F0) +J35
A75:  'VARIABLE RECURRENT                                         J96:  'No. Patient Visits - Base
I75:  'enter costs                                                B98:  0.887
A76:  'Medical supplies                                           C98:  'Income Elasticity of Demand
D76:  (C0) [W11] 0                                                I98:  (F4) +I96/I95
E76:  (F0) [W14] +F8                                              J98:  'Probability of Seeking Curative Care - Base
F76:  (P0) [W11] 0.25                                             B100: -0.2
G76:  (C0) (D76*E76*(1-F76))*(1+$B$102)     ---                   C100: 'Price Elasticity of Demand
A77:  'Pharmaceuticals                                            B102: (P0) 0
D77:  (C2) [W11] +I77/((@SUM(J14..J18))+J32+J31)                  C102: 'Inflation Rate
E77:  (F0) [W14] +F8*$B$106                                       E102: [W14] '(0% in base year 1)
F77:  (P0) [W11] 0.25                                             B104: 0.1
G77:  (C0) (((D77*E77*(1-F77))+($B$104*D77*E77*(1-F77)))*$B$108)*(1+$B$102)   C104: 'Pharmaceutical Wastage
I77:  800                                                         B106: 0.5
A78:  'Lab supplies                                               C106: 'Avg. No. Prescriptions Per Patient
D78:  (C2) [W11] +E78/I78                                         B108: 1.51
E78:  (F0) [W14] +J30                                             C108: '$ Haitian = 1 $ US
F78:  (P0) [W11] 0                                                B110: 0.66
G78:  (C0) ((D78*E78*(1-F78))*$B$108)*(1+$B$102)                  C110: '$ US = 1.0 $ Haitian
I78:  100                                                         B112: (P0) 0
G79:  \-                                                          C112: 'Price Increase
B80:  'Subtotal Variable Recurrent
G80:  (C0) @SUM(G76..G78)
A81:  \-
B81:  \-
C81:  \-
```

MIREBALAIS HOSPITAL
BREAK-EVEN ANALYSIS
(Current $Haitian)

Year		1
Patient Visits		
Per Month:	2,528	

MONTHLY REVENUES

SERVICES	PRICE	QUANTITY	FEE COLLECTED	REVENUE
Inpatient Ophthalmology	$5.00	0.4%	90%	$41
Inpatient Medicine	$5.00	1.6%	90%	$180
Inpatient Pediatric	$5.00	0.7%	90%	$77
Inpatient Maternity	$5.00	0.4%	90%	$41
C-section	$70.00	0.2%	90%	$315
Outpatient (new adult)	$1.00	14.8%	90%	$338
Outpatient (new prenatal)	$1.00	4.8%	90%	$110
Outpatient (new pedi)	$1.00	11.7%	90%	$267
Outpatient (rev.adult)	$0.60	10.3%	90%	$140
Outpatient (rev. prenatal)	$0.60	3.2%	90%	$44
Outpatient (rev. pedi)	$0.60	6.3%	90%	$86
Outpatient (ophthalmo)	$1.00	19.8%	90%	$450
Surgery	$70.00	0.3%	90%	$504
Surgery (ophthalmo)	$200	0.1%	90%	$360
Emergency	$2.00	3.8%	90%	$171
Injections	$2.00	21.6%	90%	$985
Laboratory	$0.80	12.0%	90%	$218
Pharmacy Outpatient	$1.50	35.6%	90%	$1,215
Pharmacy Emergency	$6.00	2.8%	90%	$378
Vaccinations	$0.00	36.7%	90%	$0

SUBTOTAL-PATIENT REVENUES	$5,919
Estimated Grant Income	$6,500
TOTAL REVENUES PER MONTH	$12,419

(a) Quantity is percentage of monthly patient visits.
     Patients may receive more than one service.

MONTHLY COSTS	UNIT COST	QUANTITY	SUBSIDY	TOTAL
FIXED RECURRENT				
Salaries				
Hospital Manager	$1,400	1	0%	$1,400
Accountant	$300	1	0%	$300
Physicians	$1,200	4	40%	$2,8⌣⌣
Nurses	$400	4	60%	$640
Lab technician	$250	1	50%	$125
Pharmacist	$250	1	0%	$250
Cashier	$250	1	50%	$125
Secretary	$325	1	0%	$325
Auxiliary staff	$250	2	55%	$225
Driver	$250	1	0%	$250
Insurance	$293	1	0%	$293
Bonuses	$314	1	0%	$314
Depreciation	$554	1	0%	$554
Vehicle	$1,500	1	0%	$1,500
Furniture	$0	1	0%	$0
Per diem	$150	2	0%	$300
Office supplies	$200	1	0%	$200
Utilities	$250	1	80%	$50
Administration	$400	1	0%	$400
Eye Care MARCH	$22,029	1	100%	$0
Subtotal Fixed Recurrent				$10,130
VARIABLE RECURRENT				
Medical supplies	$0	2528	25%	$0
Pharmaceuticals	$0.76	1264	25%	$1,200
Lab supplies	$3.03	303	0%	$1,386
Subtotal Variable Recurrent				$2,586
TOTAL COSTS PER MONTH				$12,716

```
|  BREAK-EVEN:                        ($298)           |
|                                                      |
|                            Surplus/(Deficit)         |
```

MIREBALAIS HOSPITAL
BREAK-EVEN ANALYSIS
(Current $Haitian)

	Year	1
|Patient Visits		
|Per Month:	2,528	

MONTHLY REVENUES

SERVICES	PRICE	QUANTITY	FEE COLLECTED	REVENUE
Inpatient Ophthalmology	$5.00	0.4%	100%	$45
Inpatient Medicine	$5.00	1.6%	100%	$200
Inpatient Pediatric	$5.00	0.7%	100%	$85
Inpatient Maternity	$5.00	0.4%	100%	$45
C-section	$70.00	0.2%	100%	$350
Outpatient (new adult)	$1.00	14.8%	100%	$375
Outpatient (new prenatal)	$1.00	4.8%	100%	$122
Outpatient (new pedi)	$1.00	11.7%	100%	$297
Outpatient (rev.adult)	$0.60	10.3%	100%	$156
Outpatient (rev. prenatal)	$0.60	3.2%	100%	$49
Outpatient (rev. pedi)	$0.60	6.3%	100%	$96
Outpatient (ophthalmo)	$1.00	19.8%	100%	$500
Surgery	$70.00	0.3%	100%	$560
Surgery (ophthalmo)	$200	0.1%	100%	$400
Emergency	$2.00	3.8%	100%	$190
Injections	$2.00	21.6%	100%	$1,094
Laboratory	$0.80	12.0%	100%	$242
Pharmacy Outpatient	$1.50	35.6%	100%	$1,350
Pharmacy Emergency	$6.00	2.8%	100%	$420
Vaccinations	$0.00	36.7%	100%	$0

SUBTOTAL-PATIENT REVENUES				$6,577
Estimated Grant Income				$0
TOTAL REVENUES PER MONTH				$6,577

(a) Quantity is percentage of monthly patient visits.
     Patients may receive more than one service.

MONTHLY COSTS	UNIT COST	QUANTITY	SUBSIDY	TOTAL
FIXED RECURRENT				
Salaries				
Hospital Manager	$1,400	1	0%	$1,400
Accountant	$300	1	0%	$300
Physicians	$1,200	4	40%	$2,880
Nurses	$400	4	60%	$640
Lab technician	$250	1	50%	$125
Pharmacist	$250	1	0%	$250
Cashier	$250	1	50%	$125
Secretary	$325	1	0%	$325
Auxiliary staff	$250	2	55%	$225
Driver	$250	1	0%	$250
Insurance	$293	1	0%	$293
Bonuses	$314	1	0%	$314
Depreciation	$554	1	0%	$554
Vehicle	$1,500	1	0%	$1,500
Furniture	$0	1	0%	$0
Per diem	$150	2	0%	$300
Office supplies	$200	1	0%	$200
Utilities	$250	1	80%	$50
Administration	$400	1	0%	$400
Eye Care MARCH	$22,029	1	100%	$0
Subtotal Fixed Recurrent				$10,130
VARIABLE RECURRENT				
Medical supplies	$0	2528	25%	$0
Pharmaceuticals	$0.76	1264	25%	$1,200
Lab supplies	$3.03	303	0%	$1,386
Subtotal Variable Recurrent				$2,586
TOTAL COSTS PER MONTH				$12,716

```
-------------------------------------------------
-------------------------------------------------
| BREAK-EVEN:           ($6,140)           |
|                                          |
|                       Surplus/(Deficit)  |
-------------------------------------------------
```

YEAR	PRICE Δ	COLLECT. RATE	GRANT	COST SUBSIDY Δ	COST PER RX	#RX PER PT	POP. GROWTH RATE	GDP P.CAP	INCOME ELASTIC	PRICE ELASTIC	PT VOLUME Δ	INFLATION RATE	DRUG WASTE	EXCHANGE RATE	BREAK-EVEN POINT
1	50%↑	50 %	0	0	.76	.5	2.2	350	.887	-.2	0	0	.1	1.51	$-8,461
1	$4.5/Rx	50%	"	"	.16	2	"	"	"	"	"	"	"	"	-$8,696
1	25%↑	100%	"	"	.76	.5	"	"	"	"	"	"	"	"	-$5,168
2	25%↑	"	"	"	"	"	"	"	"	"	"	"	"	"	-$5,029
2	"	"	"	"	"	"	"	"	"	"	100%↑	"	"	"	-$1,620
2	25%↑ +$3/Rx	"	"	"	"	"	"	"	"	"	"	"	"	"	$-488
3	"	"	"	"	"	"	"	"	"	"	"	"	"	"	$-191
4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	$+174
1	50%↑	"	"	"	"	"	"	"	"	"	0	"	"	"	$-4,324
1	0	50%	"	"	"	"	"	"	"	"	"	"	"	"	$-9,428
1	"	100%	"	50%↓	"	"	"	"	"	"	"	"	"	"	$-8,150
1	"	"	"	100%↓	"	"	"	"	"	"	"	"	"	"	$-10,145
1	"	"	"	0	.16	"	"	"	"	"	"	"	"	"	$-5,192
1	"	"	"	"	.76	"	"	"	"	"	↑50%	"	"	"	$-4,533

YEAR	PRICE Δ	COLLECT. RATE	GRANT	COST SUBSIDY Δ	COST PER RX	# RX PER PT	POP. GROWTH RATE	GDP p.cap	income elasticity	price elasticity	Δ patient volume	INFLATION RATE	DRUG WASTE	EXCHANGE RATE	BREAK-EVEN POINT
1	0	100%	$6,500	0	.76	.5	2.2	350	.887	-.2	0	0	.1	1.51	+ $360
2	0	"	"	"	"	"	"	"	"	"	"	"	"	"	+ $478
3	"	"	"	"	"	"	"	"	"	"	"	"	"	"	+ $599
1	0	"	0	"	"	"	"	"	"	"	"	"	"	"	− $6,140
2	"	"	0	"	"	"	"	"	"	"	"	"	"	"	− $6,022
2	"	"	0	"	"	"	"	"	"	"	"	20%	"	"	− $8,570
2	"	"	0	"	"	"	"	250	"	"	"	0	"	"	− $7,404
2	"	"	"	"	"	"	"	250	"	"	"	20%	"	"	−$9,901
1	100%↑	"	"	"	"	"	"	350	"	"	"	0	"	"	$−2,993
2	100%↑	"	"	"	"	"	"	"	"	"	"	"	"	"	$−2,806
1	25%↑	"	"	"	"	"	"	"	"	"	"	"	"	"	−$5,168
2	↑25%	"	"	"	"	"	"	"	"	"	"	"	"	"	$−5,029
2	↑25%	"	"	"	"	"	"	"	"	"	"	20%	"	"	$−7,565
2	↑25%	"	"	"	"	"	"	"	"	"	"	10%	"	"	−$6,297
2	↑30%	"	"	"	"	"	"	"	"	"	"	20%	"	"	−$7,383
"	50%↑	"	"	"	"	"	"	"	"	"	"	20%	"	"	−$6,690

YEAR	PRICE Δ	COLLECT. RATE	GRANT	COST SUBSIDY Δ	COST PER RX	#RX PER PT.	POP. GROWTH RATE	GDP P.CAP.	INCOME ELASTIC.	PRICE ELASTIC.	PT VOLUME Δ	INFLATION RATE	DRUG WASTE	EXCHANGE RATE	BREAK-EVEN POINT
1	50%↑	100%	0	0	.76	.5	2.2	350	.887	-.05	0	0	.1	1.5	-8,278
1	25%↑	"	"	"	"	"	"	"	"	-.6	"	"	"	"	-5,656
1	25%↑	"	"	"	"	"	"	"	"	-.05	"	"	"	"	-4,968
1	0	"	"	"	2	"	"	"	"	-.2	"	"	"	"	-8,689
1	"	"	"	"	2	1	"	"	"	"	"	"	"	"	-11,239
1	"	"	"	"	2	2	"	"	"	"	"	"	"	"	-17,537
1	"	"	"	"	.76	.5	"	"	"	"	"	"	.5	"	-6,576
1	"	"	"	"	"	"	"	"	"	"	"	"	"	1.75	-6,551
1	"	"	"	"	"	"	"	"	"	"	"	"	"	1.2	-5,609

YEAR	PRICE Δ	COLLECT. RATE	GRANT	COST SUBSIDY Δ	COST PER RX.	#RX PER PT.	POP. GROWTH RATE	GDP P.CAP.	INCOME ELASTIC.	PRICE ELASTIC.	PT. VOLUME Δ	INFLATION RATE	DRUG WASTE	EXCHANGE RATE	BREAK-EVEN POINT
1	0	100%	0	0	.76	.5	2.2	350	.887	-.2	100%↑ (IN PTS.)	0	.1	1.5	$ -5,713
"	↓	↓	↓	↓	↓	↓	"	↓	↓	↓	50%↑ (OUTPT.)	"	"	↓	$ -5,552
"							"				0	8%	"		$ -7,157
"							"				↓	0	0		$ -6,031
2							3					↓	↓		$ 5,979
2							1								$ -6,086
1							2.2	250	.5						$ -6,908
1							2.2	250	1						$ -7,676
1							"	450	.887						$ -4,774
1							"	450	.5						$ -5,372
1							"	450	1						$ -4,604
1	100%↑						"	350	.887	-.6					$ -6,394
1	100%↑						"	↓		-.05					$ -1,718
1	50%↑						"			-.6					$ -8,949

CITY+MED ACCOUNTING SYSTEM
DOCUMENT FLOW CHART

EXPENSES

GRANT & SERVICE
DELIVERY REVENUES

PURCHASE ORDER

RECEIPTS

VENDOR'S INVOICE

OTHER INTERNAL FORMS

TRAVEL EXPENSES

PAYROLL RECORDS

GRANT ADVANCE CHEQUE

CASH RECEIPTS CONROLLED THROUGH LINKAGE TO PATIENT SERVICE RECORDS AND DRUG INVENTORY RECORDS

MAY BE SEVERAL BANK ACCOUNTS, ALL BASED ON SAME FLOW OF INFORMATION INTO THE INTEGRATED JOURNAL.

CASH RECEIPTS

RECEIPTS

CHECK REQUEST

PETTY CASH RECONCILIATION

BANK CHEQUE

BANK DEPOSIT SLIP

ADJUSTING ENTRIES

BANK STATEMENT

COMBINATION (OR INTEGRATED) JOURNAL
(EVERY TRANSACTION FLOWS THROUGH HERE)

BANK RECONCILIATION

GENERAL LEDGER

MONTHLY GRANT REPORTS TO USAID

MONTHLY INCOME STATEMENT (CENTRAL OFFICE)

CENTRAL COSTS ALLOCATED

MONTHLY INCOME STATEMENT (EACH FACILITY)

THREE MAJOR CATEGORIES OF DOCUMENTS
AND STAGES OF INFORMATION FLOW

1

THE SOURCE DOCUMENTS INCLUDE ALL OF THE BASIC AND ORIGINAL INFORMATION THAT SUPPORTS EACH INDIVIDUAL TRANSACTION ENTERED IN THE ACCOUNTING SYSTEM

EXAMPLES OF SOURCE DOCUMENTS INCLUDE CASH RECEIPT RECORDS, BANK DEPOSIT SLIPS, CHEQUE REQUESTS, CHEQUES PROFORMA QUOTATIONS, PURCHASE ORDERS, VENDORS' INVOICES, RECEIPTS, PAYROLL RECORDS, TRAVEL EXPENSE FORMS, PETTY CASH RECONCILIATIONS, BANK STATEMENTS, AND OTHER INTERNAL AND EXTERNAL DOCUMENTS THAT SUPPORT CASH DISBURSEMENTS, RECEIPTS, AND SPECIAL ADJUSTING ENTRIES

2

THE COMBINATION JOURNAL CAPTURES THE FLOW OF INFORMATION FOR EACH TRANSACTION ON A SINGLE LINE THAT INCLUDES ALL DEBIT AND CREDIT ENTRIES RELATED TO THAT TRANSACTION ENTERED UNDER A RANGE OF ACCOUNT COLUMNS. DEBITS AND CREDITS WILL CANCEL OUT ON A SINGLE ROW, ENSURING THE ACCURACY OF EACH ENTRY. COLUMNS WILL BE TOTALLED ON A MONTHLY BASIS TO PROVIDE A TRIAL BALANCE AND OTHER DATA REQUIRED FOR THE MONTHLY REPORTS ON THE PROJECT

EXAMPLES OF INFORMATION IN THE COMBINATION JOURNAL INCLUDE CURRENT BANK BALANCES, PETTY CASH BALANCE, VALUE OF INVENTORY ON HAND, VALUE OF EQUIPMENT AND FURNITURE, OUTSTANDING LIABILITIES, TO DATE & MONTHLY EXPENSES FOR EACH EXPENSE CATEGORY, TO DATE & MONTHLY REVENUES FOR EACH REVENUE CATEGORY, BASED ON DEPARTMENTAL CODES. THIS INFORMATION WILL BE COLLECTED FOR EACH CITY+MED FACILITY AND FOR THE CENTRAL OFFICE. CENTRAL OFFICE COSTS WILL BE REALLOCATED TO THE FACILITIES AT THE END OF EACH MONTH

ALTHOUGH THE COMBINATION JOURNAL HAS BEEN DEVELOPED IN A MANUAL FORM, IT IS ALSO TO BE MAINTAINED IN A LOTUS FILE IN ORDER TO FACILITATE SORTING AND ADDITION OF DATA RELATED TO EACH CITY+MED ACCOUNTING DEPARTMENT

MONTHLY ACCOUNT BALANCES FROM THE COMBINATION JOURNAL ARE ENTERED IN THE GENERAL LEDGER

3

INFORMATION COLLECTED AND SUMMARIZED IN THE COMBINATION JOURNAL IS USED, ALONG WITH BUDGETARY INFORMATION, TO PRODUCE REQUIRED MONTHLY REPORTS TO USAID AND MONTHLY INCOME/EXPENSE STATEMENTS ON EACH OF CITY+MED'S DEPARTMENTS. THE MONTHLY (INDIRECT) COSTS OF CITY+MED'S CENTRAL OFFICE ARE COLLECTED AND THEN ALLOCATED TO THE (DIRECT COSTS) OF EACH OF CITY+MED'S ACTIVE FACILITIES. THESE REPORTS WILL ALLOW AN ASSESSMENT OF MOVEMENT TOWARD BREAKEVEN, ALONG WITH OTHER FINANCIAL PERFORMANCE INDICATORS

INFORMATION COLLECTED AND SUMMARIZED IN BOTH THE COMBINATION JOURNAL AND THE GENERAL LEDGER WILL ALSO PROVIDE THE ACCOUNTING DATA FOR STANDARD ANNUAL FINANCIAL STATEMENTS (I.E. BALANCE SHEET AND INCOME STATEMENT) PRESENTED IN A STANDARD NON-PROFIT FUND ACCOUNTING FORMAT

APPENDIX G: CHARTS OF ACCOUNTS

City & Med. Chart of Accounts

Account Title	Account Number
Cash at Center	101
Cash at Facility	102
Petty Cash	109
Bank Account #1 (local)	111
Bank Account #2 (local)	111-1
Bank Account #3 (U.S.)	112
Inventory	200
Drug	2001
Medical Supplies	2002
Land	330
Hospital Land	
Facilities Land #1	331
Building	340
Facilities Building #1	341
Equipments	350
Exam Room Equipment	351
Lab Equipment	352
X-Ray Equipment	353
Generator	351-1
Generator	
Trauma/Gym. Equipment	352-1
Computer Equipment	
Vehicle	354
Furniture	360
Office Furniture-Central	361
Office Furniture-Facility #1	362
Clinic Furniture-Facility #1	363
Clinic Furniture-Facility #2	364
Clinic Furniture-Facility #2	364-1
Accumulated Depreciation	390
Acc. Dep. Building-Facility #1	391
Acc. Dep. Building-Facility #2	391-1
Acc. Dep. Equipment-Facility #1	392
Acc. Dep. Furniture-Center	393
Acc. Dep. Furniture-Facility #1	393-1
Tax Liabilities	400

Chart of Accounts - Mirebalais Hospital

Accounts	Account Number
1 0 Cash	
Cash	1 0 1
Petty Cash	1 0 9
1 1 Bank	1 1 2
1 3 Account Receivable	1 1 3
2 0 Inventory	2 0 0
Drug	2 0 0 - 1
Medical Supplies	2 0 0 - 2
3 5 Equipment	3 5 0
Exam Room Equipment	3 5 1
Generator	3 5 1 - 1
Lab Equipment	3 5 2
X-Ray	3 5 3
Vehicle	3 5 4
3 6 Furniture	3 6 0
Office Furniture	3 6 1
Clinic Furniture	3 6 2
3 9 Accumulated Depreciation	3 9 0
Acc. Dep. Equipment	3 9 2
Acc. Dep. Furniture	3 9 3
4 0 Tax Liabilities	4 0 0
Tax on Salaries-ONA	4 0 6
Accounts Payables	4 1 0
5 4 Grant Capitalization	5 4 0
6 1 Services & Sales of Drugs	6 1 0
Consultations	6 1 1
Sales of Drugs	6 1 2
Lab Test	6 1 3
Injection	6 1 4
Hospitalization	6 1 5
Emergency	6 1 6
Grant Income	6 1 7
7 4 Administrative Cost	
Salary	7 4 0
Hospital Manager	7 4 0 - 1
Accountant	7 4 0 - 2
Doctors	7 4 0 - 3
Nurses	7 4 0 - 4

Lab Tech.	740-5
Pharmacist	740-6
Cashier	740-7
Secretaries	740-8
Auxiliary Staff	740-9
Driver	740-11
Depreciation	742
Vehicle	742-5
Furniture	742-6
Assurances	743
Office Supplies	746
Medical Supplies	746-1
Drug	746-2
Lab Supplies	746-3
Per Diem	747

Budget Line Item
Personnel
Commodities
Evaluations
Consultant
Training
Travel & per diem
Audits

Account Title	Account Number
Cash	1000
Cash on hand	1010
Petty cash	1090
Bank	1110
Bank - VACS	1121
Bank - IAF	1121 - 1
Bank - W.N.	1121 - 2
Accounts Receivable	1300
Hospital Patient	1311
Grant - VACS	1312
Grant - IAF	1313
Grant - W.N.	1314
Stock	2000
Drugs Hospital	2001
Drugs - Facilities	2002
Office supplies head office	2010
Office supplies hospital	2011
Equipment	3500
Hospital equipments	3510
Vehicle	3540
Horses	3541
Office Furniture	3600
Head office furniture	3610
Hospital furniture	3620
Facilities furniture	3621
Impôts et taxes à payer	4000
Taxes et obligations sur salaires	4060

IRI 4061
ONA   4066
Fournisseurs   4100
   Capitalize - Grant   5400

Income   6100
   Income IAF   6510
   Income VACS   6520
   Income W.N.   ⌐   6530
   Donation - Medecine   6540
   Donation Equipment   6550
Purchases   7000
   Purchases of medicine   7020
salaries   7400
   Account/Manager   7401
   Coordinator   7402
   Asst. Coord. North   7402 - 1
   Asst. Coord.Gascogne   7402 - 2
   Supervisor Mirebalais   7403
   Animators Mirebalais   7404
   Animators Gascogne   7404 - 1
   Animators Northwest   7404 - 2
   Drivers   7405
Depreciation   7420
   Depreciation - Office furniture   7426
   Depreciation - Vehicle   7427
   Depreciation - Hospital furniture 7428
Insurance   7430
   Office supplies - head office   7460
   Office supplies hospital   7461
   Office supplies - facilities   7462
   Telephone   7471
   Fuel   7472
   Electricity   7473
   Entretien   7474
   Training   7475
Others   7480
   Audit   7481
   Village seminars   7482
   Credit for Micro Projects   7483
   Per diem   7484

Tax on Salaries-ONA	406
Account Payables	410
Grant Capitalization	540
Sales of Drugs and Services	610
Consultations-Hospital	611
Consultations-Facility #1	611-1
Sale of Drug-Hospital	612
Sale of Drug-Facility #1	612-1
Lab & X-Ray-Hospital	613
Lab & X-Ray-Facility #1	613-1
Grant Income	614
Salary	740
Project Director	740-1
Project Manager	740-2
Accountant	740-3
Auxiliary Staff	740-4
Doctors	740-5
Auxiliary Staff	740-6
Secretaries	740-7
Messengers	740-8
Guards	740-9
Office Supplies	746
Medical Supplies	746-1
Drug	746-2
Lab Supplies	746-3
X-Ray Supplies	746-4
Major Medical Supplies	746-5
Clinic Utilities	747-1
Adm. Utilities	747-2
Rent	747-3
Audit	750

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